2002 Annual Report

Pesticide Incident Reporting and Tracking (PIRT) Review Panel

December 2002

(Includes Agency Data for 2000)

Environmental Health Programs

2002 Annual Report

Pesticide Incident Reporting and Tracking Review Panel

A report to the legislature as required by
Chapter 380, Laws of 1989, and RCW 70.104

December 2002

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Executive Summary

The 2002 report is the Pesticide Incident Reporting and Tracking (PIRT) Review Panel's twelfth annual report. The PIRT Review Panel consists of the Washington State Departments of Agriculture (WSDA), Ecology, Health (DOH), Labor and Industries (L&I), Natural Resources (DNR), Fish and Wildlife (WDFW), as well as the University of Washington (UW), Washington State University (WSU), Washington Poison Center (WPC), a practicing toxicologist, and a member of the public.

The PIRT Panel is directed by statute (RCW 70:104.090) and has among its responsibilities the identification of inadequacies in pesticide regulations that result in insufficient protection of public health and the approval of an annual report summarizing pesticide incidents. This PIRT report presents and evaluates pesticide incidents reported in 2000 from four state agencies: Agriculture, Ecology, Health, and Labor and Industries, and from the Washington Poison Center. It also describes PIRT 2001 panel activities. This is the complete report to the legislative summary published by DOH in July 2002.

The following agency summaries identify key points from the analysis of pesticide incident data.

Washington State Department of Agriculture (WSDA)

For 2000, WSDA investigated 199 pesticide-related complaints. Complaint numbers were up slightly but not significantly from 1999 (192). Eleven counties reported 68 percent of the complaints with the top two counties, Yakima and Grant, reporting 24 percent of all complaints. Twenty-seven percent (54) of complaints resulted from pesticide drift. Forty of the complaints concerned human exposures. There were 121 violations in 2000. This is a 20 percent increase in violations from 1999 (101). About one third of violations involved commercial applicators.

Washington State Department of Ecology

In 2000, Ecology investigated 63 pesticide-related complaints involving threats to air, water or soil. Twenty-two counties reported complaints with Yakima and King counties reporting the most complaints. Twenty-eight (44%) complaints occurred in the agricultural environment, 15 (24%) in the commercial/industrial environment and 20 (32%) stemmed from residential activities. Ecology is responsible for oversight of contaminated areas requiring cleanup or monitoring. During 2000, Ecology placed 11 pesticide-contaminated sites on the cleanup list.

Washington State Department of Health (DOH)

Washington is one of ten states with an active pesticide illness surveillance program. For 2000, DOH investigated 302 pesticide incidents involving 388 individuals. Approximately half (203) of the illness/injuries were classified as being definitely, probably or possibly related to the pesticide exposure.

More than half (113) of the 2000 cases occurred in the agricultural environment. Agricultural cases were equally divided between the tree fruit and field crop production industries. Most occupational incidents resulted from applicator exposure or pesticide drift. General agricultural workers were three times more apt to be exposed to drift (33) than to residues (12). Occupational non-agricultural cases most often occurred in office or retail buildings. Non-occupational cases occurred most frequently in and around the home. Pesticide-related incidents reported to DOH increased by 11% from 271 in 1999 to 302 in 2000.

Washington State Department of Labor and Industries (L&I)

For 2000, L&I WISHA Services Division conducted 34 pesticide-related safety and health investigations. Thirty of the investigations resulted in citations being issued against the employer.

The Insurance Services Division, Claims Administration Program received 180 claims relating to pesticide illness. Seventy-three percent (132) of pesticide-related claims involved agricultural workers and 73 percent (96) of agricultural claims resulted from work in the tree fruit industry. In the non-agricultural environment the greatest number of pesticide-related claims came from the manufacturing (25%) environment. L&I pays the initial diagnostic and evaluation costs of worker compensation claims regardless of the final decision. For 2000, 99 percent of all initial medical visits were paid.

Washington Poison Center (WPC)

In 2000, WPC provided immediate professional medical advice regarding poisoning questions and emergencies to 118,404 callers. Of these, 2,326 calls were pesticide-related. More than half (1,330) of the calls involved insecticides and insect repellents. Twenty percent involved herbicides. Most (93%) of pesticide-related calls involved unintentional exposure. WPC referred 204 human exposures with reported signs or symptoms of pesticide illness to DOH for investigation.

Introduction

The PIRT Review Panel was created by RCW 70.104.090 (Appendix A). Its membership consists of representatives of six state agencies, the University of Washington, Washington State University, the Washington Poison Center (WPC), a practicing toxicologist and a member of the public. See Appendix A for a list of the PIRT panel members in 2000.

By statute, the PIRT Review Panel is mandated to perform the following activities with regard to pesticide-related incidents that have suspected health or environmental effects:

- Centralize the receipt of information regarding pesticide complaints and their investigations and monitor timeliness of agencies' response to complainants.
- Identify inadequacies in pesticide regulations that result in insufficient protection of public health.
- Submit an annual report summarizing pesticide incidents to the legislature.

Each agency conducts pesticide incident investigations in accordance with its specific statutory responsibilities (Appendix A) and reports findings to the PIRT Review Panel for evaluation and inclusion in the annual report. The PIRT Review Panel has no regulatory authority but acts in an oversight capacity to the six agencies and makes recommendations to the agencies, to the legislature or to the federal Environmental Protection Agency.

This report describes activities of the PIRT Review Panel for 2001 and its recommendations for 2003. It also contains a review of the WSDA, DOH, Ecology, and L&I pesticide-related complaints and the WPC calls and provides analyses of each agencies incident.

2001 PIRT Activities

The PIRT Review Panel met eight times in 2001. The panel monitored each agency's response time to calls on complaints, monitored actions stemming from recommendations made in the prior PIRT Review Panel Annual Report, analyzed incident data to identify trends and patterns of problems related to pesticides, and responded to requests for special activities from the members.

Response Times

RCW 70.104.080 specifically directs the PIRT Review Panel to monitor agency response time to pesticide-related complaints. Response time is defined as the interval between initial receipt of a complaint and an agency's first response to the complainant. The first notification is usually by telephone, followed by a personal contact. In 2000, WSDA responded to 93 percent of all complaints within 24 hours; DOH responded to 99 percent of complaints within 48 hours; and, L&I responded to the majority of complaints within 30 days. The three agencies have different mandates for response times (Appendix A).

Actions on 2000 Recommendations of the PIRT Review Panel for 2001:

- Prepare a five-year analysis of incident data.
  Action: The five-year (1995-1999) data analysis of reported pesticide incidents was published in the 2000-2001 annual report. The number of reported pesticide incidents appears to be declining, however the number of incidents resulting in a WSDA "violation" and the number of incidents determined to be actually pesticide related by DOH remained relatively constant over the five years.

- Identify risk factors for the agencies to incorporate into their training and education programs.
  Action: The PIRT Review Panel identified risk factors from the five-year incident data analysis. The factor "off target drift" continues to be a primary source of exposure. Eye irritation from occupational exposure is the most commonly reported health complaint.

- Review agency data for active ingredients involved in pesticide incidents.
  Action: The panel reviewed data for active ingredients involved in incidents. No clear pattern could be established from incidents resulting in the more severe human incidents. Over the 5 years, the pesticides most frequently involved in incidents investigated by WSDA were: 2,4-D, Dicamba, Glyphosate, Azinphos-methyl, and Diazinon.

- Review a sample of pesticide labels involved in incidents to determine if instructions were adequate to have prevented the accident had they been used according to the label.
  Action: The PIRT Review Panel reviewed WSDA and DOH cases occurring in commercial establishments. A review of seven WSDA cases found that adverse outcomes generally occurred for applications made when people were present. Label messages were ambiguous and did not clearly advise that persons other than the applicator were to 'vacate the premise'. DOH had reports of 88 incidents that occurred in commercial establishments. The DOH review of the product labels was inconclusive because the incidents involved many different products, exposure scenarios were diverse, and the data system could not provide the specificity needed to address if directions on the label were followed correctly. The panel continues to address the issue.

- Prepare revisions to RCW 70.104.070-090 to more accurately address pesticide issues of concern to the public, and to reflect activities of the PIRT Review Panel.
  Action: The panel reviewed the PIRT Panel statute, RCW 70.104.070-090 and noted where revisions were needed. The panel will draft proposed revisions for introduction to a future legislative session.

- Identify agency activities regarding urban pesticide use.
  Action: This was an agenda item at several PIRT meetings in 2000 and 2001. Information was shared and communication increased between the agencies. The panel will carry this recommendation into next year's work plan.

Other activities of the PIRT Review Panel for 2001

Gypsy Moth Eradication-Use of Btk
In May 2000, WSDA contracted for the aerial application of Foray 48B to 725 acres of residential Seattle to prevent infestation of the Asian gypsy moth (AGM). Foray 48B, which contains *Bacillus thuringiensis kurstaki* (Btk), a naturally occurring agent of disease in caterpillars, was applied in the neighborhoods of Ballard and Magnolia. Simultaneously, DOH surveillance yielded reports of 59 persons in 50 households with at least one health "symptom" occurring after aerial spraying. Fourteen individuals from eight households sought some type of health care. The most frequent health complaints were: cough, headache, trouble breathing, sore throat, nasal congestion, and irritated eyes. The estimated population in the spray area was 6,600. Foray 48B was also used in ground applications to control European gypsy moth in Covington and Marysville. In May 2001, ground applications were made to a 29-acre site in Vader, WA for

European Gypsy moth. No complaints were reported. It was recommended that future WSDA programs continue wide and early notification and provide public access to scientific documentation.

National Evaluation of the Worker Protection Standard (WPS) Worker Training
In January and again in December, Alice Larson briefed the Panel on the EPA evaluation of the effectiveness of the WPS as a means to reduce the risk of pesticide poisoning and injury among workers and pesticide handlers. The process involves representatives from farmworkers, growers, state agencies and federal representatives, etc. Preliminary findings cover whether training is happening, barriers to the training, how to make the training more effective, and effective training verification systems. Final recommendations will be presented in Washington D.C. in December 2002.

Ninth Circuit Court decision regarding aquatic pesticide use
Ann Wick briefed the panel on the regulatory conflict between water quality and pesticide use under two federal EPA laws: the Clean Water Act (CWA) and the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). In Washington aquatic pesticides are regulated by WSDA under FIFRA and Ecology regulates 'pollutants' in water under CWA. A 9th Circuit Court decision in California regarding an Oregon case resulted in National Pollutant Discharge Elimination System (NPDES) permits being required for aquatic pesticide applications.

Evaluation for Pesticides in Washington State Surface Waters for Potential Impacts to Salmonids
Ann Wick discussed the work of the Washington State Pesticide/ESA Task Force, a committee charged with looking at pesticides that could threaten salmon in habitat or food. The panel developed an evaluation process that incorporates the available scientific data on 1) the occurrence of pesticides in salmon habitat and 2) the toxicity of these chemicals to fish or the aquatic food chain. It will be used to identify individual pesticides that are a potential risk to the biological requirements of threatened salmons in Washington State.

Pacific Northwest Agricultural Safety and Health Center
Richard Fenske briefed the panel on the history, funding, aims and activities of the Pacific Northwest Agricultural Safety and Health Center for the first four years (1996-2000).

UW Center for Child Environmental Health Risks Research
Richard Fenske briefed the panel on the history of the UW Center for Child Environmental Health Risks Research. The project has laboratory-based studies to identify cellular, biochemical and molecular mechanisms for the developmental neuro-toxicity of pesticides, to identify the impact of genetic polymorphisms for paraoxonase and field-based studies to identify critical pathways of pesticide exposure for children. The field studies will be used to develop a culturally appropriate intervention to break the take-home exposure pathway.

Joint meeting with the Pesticide Advisory Board and PIRT Panel
A joint meeting with the Washington State Department of Agriculture Pesticide Advisory Board and the PIRT Panel was held in Yakima to discuss the 9th Circuit Court decision and other issues of common concern. Due to the 9th Circuit Court decision, National Pollutant Discharge Elimination System (NPDES) permits are now required when applying aquatic pesticides on fresh water. Since the decision Ecology has been expanding their permit process to include the NPDES permit. An Ecology team will meet with irrigation districts, mosquito districts and applicators to discuss the court decision and Ecology's course of action and to develop the NPDES permit process.

Dan Ford reported on California's cholinesterase monitoring program for farm workers. A blood test is taken to establish a baseline on an individual, a follow up test is given 30 days later and then follow up tests as determined by a doctor. California believes their program is an important health measure as it removes workers before they become ill and keeps employer practices safe.

Department of Agriculture EPA Pilot Program
Ann Wick discussed WSDA involvement in the EPA Pilot Program to look at pesticide incidents nationally. Ten states are included in the program. EPA will analyze the state incident data for location, site, type of case, violation status, pesticide active ingredient and method of application. The purpose of the project is to determine the complexities of a national database and if trends can be identified for possible federal action.

DOH-NIOSH project "Improving Data Quality in Pesticide Illness Surveillance"
Lynden Baum reviewed the DOH-NIOSH project that includes 1) Focus groups with farmworkers in the Yakima area, 2) Provider interviews, 3) Review of outpatient records, 4) Medical chart review and 5) Spatial data improvement.

Recommendations to the PIRT Review Panel and the involved Agencies' staff for 2002:

- Further assess the 5-year incident data and identify possible prevention measures.
- Each agency improve its process and timeline for submitting analyses of incident data for the PIRT Review Panel annual report.
- Each agency continue its appraisal of pesticide use outcomes in urban areas.
- The PIRT Review Panel and the agencies seek how to capture better information about why the incident actually occurred.
- Both PIRT Review Panel and the agencies direct additional attention to the adequacy of the product label wording.
- Prepare draft legislation to modify RCW 70.104

2000 Agency Summary Reports

Table 1 summarizes 2000 pesticide-related incidents for each agency submitting data, and data from the Washington Poison Center. The incident data from each agency are described and evaluated in the following sections. Individual incident descriptions are found in Appendix D. Because of specific statutory responsibilities, incidents may be reported and investigated by more than one agency.

Table 1 Agency Summaries of Pesticide Incidents in 2000

Department of Agriculture: 199 complaints resulting in 121 violations

Complaints	**199**	**Violations**	**121**
Location of complaint:		**Violations by Type of Activity**:	
▪ Eastern Washington	133	▪ Agriculture	48
▪ Western Washington	66	▪ Commercial/industrial	33
		▪ PCO/WDO	14
		▪ Residential (homeowner)	11
Enforcement Actions:	**199**	▪ Right-of-Way	8
▪ Notice of correction	96	▪ Other (license/records)	7
▪ No Action Indicated	78		
▪ Notice of Intent/Admin action	17	**License Involved with Violations**:	**121**
▪ Advisory letter/Warning letter	4	▪ Commercial	38
▪ Referred	2	▪ Unlicensed	28
▪ Technical assistance/verbal warning	1	▪ Private Applicator	27
▪ Stop sale	1	▪ Public operator	13
		▪ Other	15

Department of Health: 302 incidents involving 388 individual cases

Type of Incident:	**302**	**Relationship to Exposure for cases**:			**388**
▪ Agriculture	164	▪ Definite	32	▪ Unlikely	26
▪ Residential	94	▪ Probable	85	▪ Insufficient info	73
▪ Commercial/industrial	26	▪ Possible	86	▪ Asymptomatic	14
▪ Other	18	▪ Suspicious	44	▪ Unrelated	28
Childhood Cases ≤ 18 years old	**56**	**Definite, Probable, or Possible Cases**:			**203**
▪ Definite, probable, or possible	31	▪ Agricultural			113
		▪ Non-Agriculture			90

Department of Labor & Industries: 34 Industrial Safety and Health Act complaints 180 Worker compensation claims

Pesticide Related Inspections:	**34**	**Worker Compensation Claims**:	**180**
▪ Citations	30	▪ Agriculture	131
Type of Business:		▪ Non Agriculture	49
▪ Orchard	24		
▪ Vegetable crops/berries	3	**Benefits**:	
▪ Mushroom farm, dairy, pest control	3	▪ Accepted-Includes medical/time loss	126
▪ Greenhouse/nursery	1	▪ Rejected	52
Crop preparation company	3	▪ Claim pending	2

Department of Ecology: 63 pesticide complaints

Washington Poison Center: 2,326 calls

Washington State Department of Agriculture

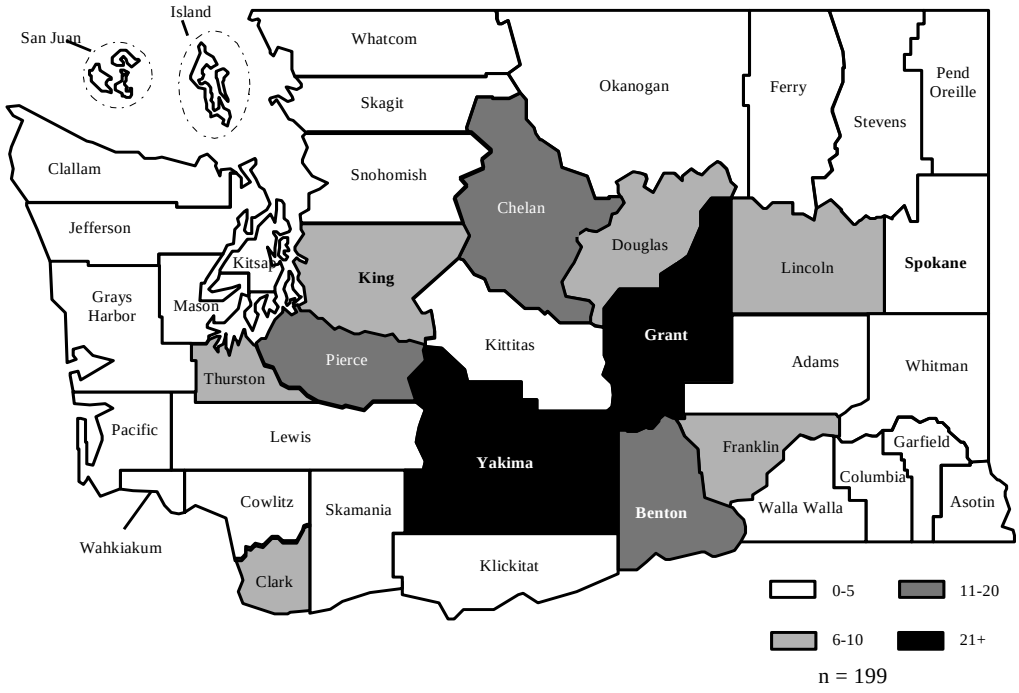
The Washington State Department of Agriculture (WSDA) investigated all reported complaints made to the department regarding pesticide use, sales, distribution, applicator licensing, storage and building structure inspections for Wood Destroying Organisms (WDO). During 2000, WSDA investigated 199 complaints (Table 2). After investigation, it was found that 156 (78%) involved pesticide applications and 43 (22%) were complaints unrelated to actual applications, such as licensing or structural inspections.

WSDA is required to respond to cases of human exposure within 24 hours of receipt. Investigation begins on other cases as soon as resources allow, generally within 2-3 days. In 2000, WSDA responded to 93 percent of all complaints within one day and all but three human exposure cases within 24 hours.

Table 2 WSDA Complaints and Violations 1992 - 2000

Year	Total Complaints	Violations
1992	558	264 (47%)
1993	400	166 (42%)
1994	383	138 (36%)
1995	259	87 (34%)
1996	251	104 (41%)
1997	204	110 (54%)
1998	204	116 (57%)
1999	192	101 (53%)
2000	199	121 (61%)

Figure 1 2000 WSDA Complaints by County



Location

One hundred thirty-three (67%) of the 2000 complaint investigations occurred in eastern Washington and 66 (33%) were in western Washington. The eleven counties reporting the most incidents were: Yakima (26), Grant (21), Pierce (16), Benton (14), Chelan (13), Clark (10), Douglas (9), King (8), Franklin (6), Lincoln (6) and Thurston (6). Table 3 lists the counties with the most complaints from 1996 through 2000.

Table 3 WSDA Counties with the most Complaint Investigations 1996 - 2000

1996		1997		1998		1999		2000	
Spokane	26	Grant	24	Yakima	28	Grant	29	Yakima	26
King	25	Yakima	22	Grant	26	Yakima	26	Grant	21
Yakima	25	King	20	Spokane	20	Spokane	18	Pierce	16
Grant	16	Spokane	18	King	14	Benton	17	Benton	14
Whatcom	14	Pierce	13	Benton	13	King	14	Chelan	13
Pierce	13	Benton	10	Chelan	10	Chelan	9	Clark	10
Skagit	13	Skagit	9	Okanogan	10	Pierce	8	Douglas	9
Clark	11	Snohomish	9	Whitman	10	Walla Walla	8	King	8
Benton	10	Okanogan	8						

Type of Activity Involved in Complaints with Violations

Complaints are classified by WSDA according to the following definitions:

- **Agricultural:** Incidents occur in an agricultural environment such as farming, forestry, greenhouses, or Christmas tree farming.
- **Commercial/industrial:** Incidents by licensed operators to offices, restaurants, homes, and landscapes.
- **Pest Control Operator (PCO):** Incidents involving a subset of commercial/industrial operators licensed to make applications to control structural pests.
- **Wood Destroying Organism (WDO):** Incidents involving inspections on structures for fungi, insects, and conditions that lead to pest conditions. No pesticide applications are made.
- **Residential:** Includes any application of a pesticide in a residential environment by the homeowner, resident, or neighbor.
- **Right-of-ways:** Applications made on public land such as roadways, electric lines and irrigation canal banks.
- **Other:** WSDA code for undefined use and includes licensing, storage, registration, records, and similar actions.

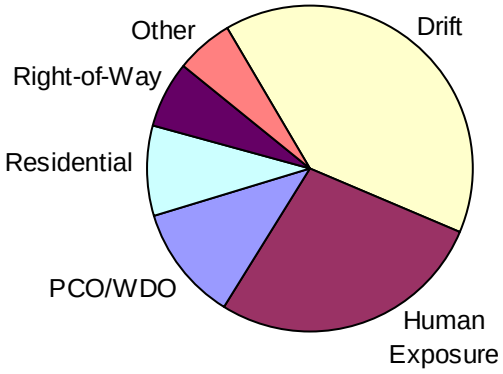
Table 4 shows the incidents with violations by type of activity from 1996 through 2000. The number of violations increased by 20 percent from 101 in 1999 to 121 in 2000 but the increase is not significant over the five-year period.

Table 4 WSDA Violations by Type of Activity 1996 - 2000

Activity	1996	1997	1998	1999	2000
Agricultural	29	40	54	50	48
Commercial/Industrial	27	22	22	19	33
PCO/WDO	20	24	8	11	14
Residential (non commercial)	9	8	7	10	11
Right-of-Way	3	10	12	1	8
Other (Licenses, Records, etc.)	16	6	13	10	7
Total Violations	**104**	**110**	**116**	**101**	**121**

Figure 2 identifies the violations by type of activity for year 2000.

Figure 2 Violations by Type of Activity 2000



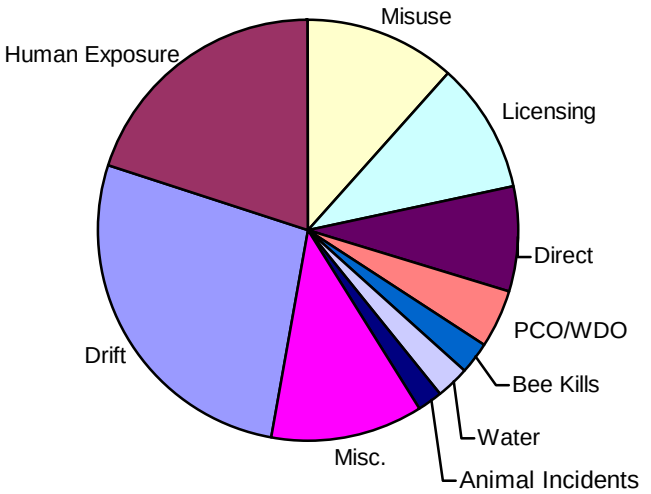
n=121

Nature of Pesticide Complaint

Drift exposure continues to be an area of concern with complaints resulting from overspray or misapplication. In 2000, 54 complaints concerned drift, 40 complaints concerned human exposure (some resulting from drift), misuse (23), licensing (20), direct (16), PCO/WDO inspections (9), bee kills (5), water contamination (5), animal incidents (4), and miscellaneous (23) (Figure 3). Children were involved directly or indirectly in 11 incidents. See Appendix D for a listing of all WSDA pesticide-related complaints.

Glyphosate drift and/or intentional neighbor-to-neighbor misuse are a continual problem but this type of incident generally does not result in health problems. Most human exposure cases appear to be due to preventable causes such as failure to observe wind direction, spraying when people are in the area, not wearing PPE, and overspray particularly near roads, rather than unavoidable accidents.

Figure 3 Nature of Complaint 2000



n=19

In agriculture, pesticides applied to orchards were the most frequently involved in complaint investigations. For 2000, pesticides applied to cherries generated the most investigations. Most of these complaints were about human exposure. The following example illustrates a drift exposure.

Case example: *Sixty people working in an industrial facility reported feeling ill in the early morning hours. A strong odor was present in the building and employees said they felt nauseated, had burning, watering eyes, sore throats, burning lungs, headaches and dizziness. Several employees were seen at the nearby outpatient hospital health service. WSDA was called to investigate as a pesticide application had occurred one-quarter mile away.*

It was determined that an application of metam-sodium (Vapam) had been applied through a center pivot irrigation system. Chemigation through center-pivot irrigation systems is a common method of application where the Vapam is injected into the irrigation line near the center point and is subsequently distributed in the irrigation water through the sprinklers onto the field. Metam-sodium is a Danger, Toxicity Class I soil fumigant. Effectiveness is enhanced with a water seal on the soil.

Four violations were cited against the applicator. The first and most serious citation was for applying Vapam under conditions that favored drift. The product was applied in the early morning hours when an inversion existed. Inversions trap small particles and fumes near ground level. Slightly later, a light wind blew the pesticide particles and fumes toward the facility where they were sucked into the ventilation system. Additionally, the nozzles used on the irrigation system produced small droplets. The label states that only sprinkler systems that give large water droplets may be used. Strong odors during or after the application are a warning to discontinue and seal the soil.

The remaining three violations concerned missing information on the Worker Protection Signs, no posting of fumigated fields as required, and missing information on the application records. The applicator was fined $7,200 in lieu of a $3600 fine and a license suspension of 88 days.

For non-agricultural cases, drift from lawn care companies and complaints about Wood Destroying Organism (WDO) inspections are the most frequent. Most of the WDO inspection complaints are about failure to report conditions conducive to rot or the presence of insects or rot. Record-keeping violations are also frequent.

The following case is an example of a typical complaint about a WDO inspection:

Case example: *A home inspection was performed prior to purchase. The inspector, hired by the seller, noted a few minor items but generally pronounced the house sound. A diagram was furnished to the prospective purchaser with only a notation about not storing firewood next to the house. The house was purchased. Several months later the new homeowner went in to the crawl space, found a large infestation of carpenter ants and a plumbing leak that had damaged the insulation and the wooden subflooring. WSDA was contacted and determined that the inspector had:*

1) *failed to make a through inspection of accessible areas*
2) *failed to record the date, name of seller and street address of the house inspected*
3) *failed to record the inspector's name and license number*
4) *failed to provide a statement describing the specific evidence of infestations, including common names*
5) *failed to provide a diagram of the areas infested*
6) *failed to provide records to WSDA on request.*

As the individual had three prior complaints, WSDA levied a fine of $1100 and six days license suspension. WSDA is in the process of instituting more comprehensive rules concerning WDO inspections but, as in all major purchases, it can be important to get more than one opinion, especially if the first person does not represent your interests.

Table 5 summarizes the investigations WSDA cited for violations.

Table 5 WSDA Comparison of the Most Frequent Target and Complaint Sites with Violations in 2000

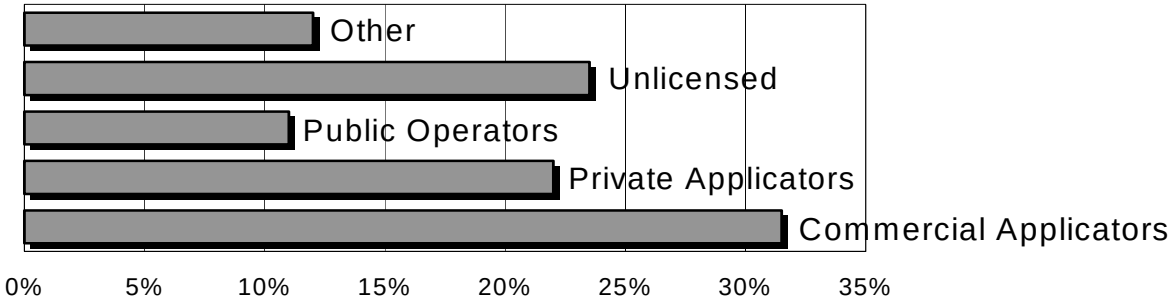
Agricultural Violations			
Target Site*		**Complaint Site****	
Cherries	9	Human Exposure	19
Pears	6	Grapes	5
Apples	4	Wheat	3
Right of Way	5	Potatoes	3
Barley/Wheat	4	Apples	3
Potatoes	2	Bees	2
Corn	2		
Non Agricultural Violations			
Target Site*		**Complaint Site****	
Wood Destroying Organisms	11	License	13
Residence/Property	10	Water	4
Right of Way	7	Human Exposure	4
Ornamentals	4	Ornamentals/Trees	8
Weeds	4	Property/Lawn	6
Lawns	5	Personal Protect. Equip.	3
		Notification	2

** Target Site is the intended target for the pesticide.*
***Complaint Site is where the pesticide landed.*

During 2000, WSDA investigated 11 cases that involved children. DOH was either notified about these cases or also investigated. When violations are evaluated by type of license involved, commercial applicators accounted for 31.5%, private applicators (22%), public operators (11%), unlicensed (23.5%) and other (12%) (Figure 4).

See Appendix E for WSDA pesticide license types. WSDA licenses more private applicators than any other type of license but commercial applicators tend to make more applications and have more contact with the public over larger areas.

Figure 4 Type of License Involved in Cases with Violations 2000



Severity of Reported Complaints

In 1996, WSDA began rating the severity of complaints. For the fifth year (2000), the majority (75%) had a low severity rating of two or less (Table 6).

Table 6 Severity Rating of WSDA Complaint Cases 1996 - 2000

Rating	1996	1997	1998	1999	2000	Criteria
0	64 (26%)	28 (14%)	31 (15%)	13 (7%)	20 (10%)	Problem not due to pesticides and/or no cause determined; PCO/WDO inspection with no violations
1	71 (28%)	67 (33%)	62 (30%)	65 (34%)	40 (20%)	Pesticides involved, no residue, no symptoms occurred; possible pesticide problem, not substantiated; issues involving records, registration, posting, notification (multiple chemical sensitivity) or licensing; DOH classified "unlikely" or "unknown"
2	79 (31%)	64 (31%)	70 (34%)	72 (38%)	89 (45%)	Residue found, no health symptoms (human, animal); health symptoms not verified; multiple minor violations; off label use; worker protection violations; PPE violations with no health symptoms; plants with temporary or superficial damage only; PCO/WDO faulty inspections; DOH classified "possible."
3	22 (9%)	30 (15%)	31 (15%)	24 (13%)	31 (16%)	Minor short-term health symptoms (rash, eye irritation, shortness of breath, dizzy, nausea, vomiting); bee kills less than 25 hives; minor fish kills; economic plant damage under $1000; evidence of deliberate economic fraud; DOH classified "probable."
4	11 (4%)	8 (4%)	9 (4%)	15 (8%)	17 (9%)	Short-term veterinary or hospital care; bee kills over 25 hives; significant fish kills; significant economic plant damage (over $1000); environmental damage; illness involving children; DOH classified "probable."
5	4 (2%)	7 (3%)	1 (.4%)	3 (2%)	2 (1%)	Veterinary or hospital care overnight or longer; physician diagnosed children's illness as caused by pesticides; animal death due to pesticides; significant environmental damage; DOH classified "definite."
6	0	0	0	0	0	Human death due to pesticides.
Total	**251** (100%)	**204** (100%)	**204** (100%)	**192** (100%)	**199** (100%)	

Type of Pesticide Involved

In 2000, herbicides were involved in 100 complaints (50%) and insecticides in 58 complaints (29%). This is a decrease in the number of complaints involving insecticides and an increase in herbicide incidents from 1999. Other products such as fungicides, disinfectants, rodenticides and surfactants made up the rest of the incidents. Many cases involved tank mixes of several products. The pesticides most frequently reported in complaints were glyphosate, 2,4-D, malathion and chlorpyrifos. Insecticide product use is changing with the cancellation of many previously registered uses and products.

Other Agencies Involved
In 2000, WSDA consulted with other state, federal and local agencies, WSU, and Food Safety on 89 investigations.

Enforcement Actions
At the time of publication, the following corrective actions had been taken by the department: Notice of Correction (96), Notice of Intent (Fines, License Suspension) (4), Advisory Letter (4), Administrative (Pending) (13), Verbal Warning (1), Referred (2), Stop Sale (1), and No Action Indicated (78).

Department of Ecology

The Department of Ecology (Ecology) participated in negotiations of the Fish and Forest rules adopted in 2000. The rules included conditions for the application of herbicides and pesticides on forests to reduce impacts to fish and their environment. Ecology is also working with National Marine Fisheries Service and other federal and state agencies to reduce the impacts of pesticide applications to salmonids under the Federal Endangered Species Act. The agency participates in the Environmental Protection Agency's (EPA) urban pesticide committee and the Washington State Healthy Schools Initiative. Ecology's responsibility for oversight of contaminated areas requiring cleanup or monitoring includes areas contaminated with pesticides. Other agency activities also help reduce pesticide incidents. Ecology's pollution prevention and sustainability efforts emphasize reduction of the overuse and misuse of pesticides.

Pesticide Related Incidents
The Department of Ecology Spill Response Program maintains a database to track pesticide-related complaints. The agency uses the data to determine where additional education is necessary to reduce pesticide impacts on human health and the environment. A summary of the pesticide data provided by this database is provided below in Table 7.

Table 7 Department of Ecology Pesticide Complaints in 2000

Type of complaint	Number	Percent
Pesticides threatening ground or surface water	20	32%
Pesticide disposal or waste concern	14	22%
Spills and fires	10	16%
Unsafe pesticide storage or handling	13	20%
Other or unknown	6	10%
Total	63	100%

In 2000, Ecology reported 63 pesticide-related complaints involving threats to air, water or/and soil. Twenty-two counties reported complaints with 37 from western Washington and 26 from eastern Washington. Sources of complaints show the majority, 38 (60 %) came from private citizens, seven came from state agencies, six came from local health or fire departments and 12 came from other sources. Pesticide-contaminated sites undergoing evaluation and/or remediation are not included in these data.

Ecology responded within 24 hours in 50 (79%) incidents. Fifty-two of the 63 complaints were resolved and closed in 2000. Twenty-eight (44%) complaints occurred in the agricultural environment, 15 (24%) in the commercial/industrial environment, and 20 (32%) stemmed from residential activities.

After Ecology responds and stabilizes the initial emergency, it often refers the complaint to another state or local agency that can more directly manage the situation. In 2000, Ecology referred 19 (30%) complaints to other agencies.

Four cases of human or animal illness resulted from smoke inhalation or an allergic reaction. Environmental impacts were documented in 11 cases, 22 complaints could not be substantiated, seven required some form of cleanup or removal of materials, and two are now a "remedial" site under Ecology's Toxics Cleanup Program. Five situations resulted in a Notice of Violation.

Educational Activities

Through a cooperative effort by the Department of Ecology, Department of Health, Department of Agriculture, Washington State University Cooperative Extension and EPA Region 10, a web site was created to help schools address pest problems in ways that protect children from pesticide exposure. The site promotes integrated pest management (IPM) and tries to make it easy for schools to adopt an IPM approach to pest control. The site can be viewed on Ecology's web site at: http://www.ecy.wa.gov/programs/wq/nonpoint/upest/why_ipm.html

A sample of the information available at the site:

- Why IPM is a wise approach to pest control in schools
- Example IPM policies and manuals for Washington schools who want to adopt what has already been developed
- Suggestions for how to deal with specific pest problems using IPM
- Where to find information about toxicity of pesticides
- Current Washington legislation that pertains to pesticide use in schools

Contaminated Sites Containing Pesticides

Ecology is responsible for oversight of contaminated areas requiring cleanup or monitoring. These sites may have become contaminated from sources such as leaking underground petroleum tanks, historic or current pesticide use, spills or industrial processes. During 2000, Ecology placed 11 pesticide-contaminated sites on the cleanup list (Appendix F. Map A). The sites were located throughout Washington and included one each in Benton, Chelan, Clark, Grant, Jefferson, King, Skagit and Snohomish Counties and three in Yakima County.

A preliminary investigation was conducted at each of these sites, three of which received a no-further-action designation. The Toxics Cleanup Program map showing cleanup sites with pesticide contamination provides the specific site area and identification tracking number. The sites are distinguished as active sites still undergoing cleanup or non-active sites that were cleaned up or required no further action. Ecology's year 2000 contaminated sites list identified a cumulative total of 249 pesticide-contaminated sites (Appendix F. Map B). Of those, 166 sites remained active in the cleanup process at the year's end (Appendix F. Map C).

Department of Health

The Department of Health Pesticide Program is responsible for investigating reports of illness related to pesticide exposure. Data collected from the investigations are used to identify public health problems and to develop strategies for prevention.

The DOH portion of the 2000 PIRT Report is divided into four sections. Section 1 gives an overview of the number and location of cases investigated by the DOH Pesticide Program. Section 2 presents occupational cases. Section 3 reviews agricultural cases and Section 4 reviews non-agricultural cases.

National Institute for Occupational Safety and Health (NIOSH) Grant
In 2000, NIOSH awarded the DOH Pesticide and Surveillance Section a three-year grant for "Improving Data Quality in Pesticide Illness Surveillance". The specific aim of the grant is to increase the value of the information generated by the Pesticide Section's "Pesticide Illness Monitoring System" (PIMS). See Appendix G for the working components of the grant and brief progress reports on work initiated in 2000 and 2001.

Section 1: Number and Location of DOH Investigations

For 2000, the Pesticide Program received 302 reports of incidents involving 388 individuals exposed to pesticides (Figure 5). The number of reported incidents increased slightly (11%) in 2000 from the dip in 1999. The majority (75%) of suspected pesticide incidents occurred in the six months between April and September. The time of year of reports is consistent with previous years.

Figure 5 Reported Incidents and Cases 1996 - 2000

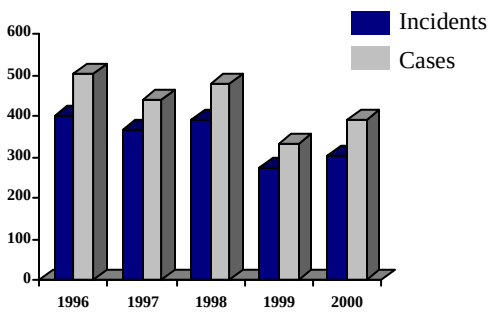
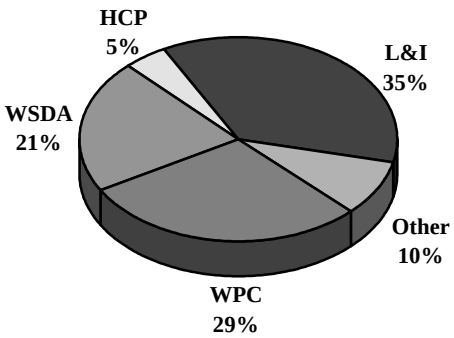


Figure 6 Source of 2000 Case Reports

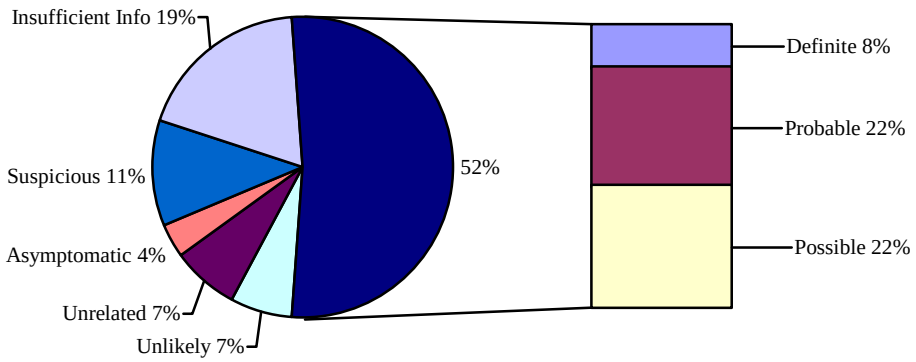


Reports of suspected pesticide illness were received from L&I claims (35%), WPC (29%), WSDA (21%), Health Care Providers (5%), and others (10%) (Figure 6). Most health care providers find it more convenient to report through the WPC. In 2000, DOH responded within 48 hours to 99 percent of reported illness.

Classification of Investigated Cases

Investigators of the Pesticide Program interview individuals and witnesses, obtain pesticide application and relevant medical records, and conduct field visits. This information is used to classify a case as to how likely the symptoms relate to the exposure. Classification depends on how verifiable the exposure and illnesses are through documentation. In 2000, the classification matrix for determining the relationship between exposure and outcome was changed to be comparable to that of other states and to meet NIOSH reporting requirements. The classifications 'indirect' and 'unknown' were replaced with 'suspicious' and 'insufficient information'. Definitions of the eight classifications are found in Appendix C. Figure 7 shows the distribution of cases by classification.

Figure 7 Classification of 2000 Cases



In 2000, 203 (52%) of the reported cases were determined to be definitely, probably, or possibly related to pesticide exposure (Table 8). Except for 1999, the number of definite, probable or possible cases each year has remained near 200. It is unknown why there was a drop in 1999.

Table 8 Definite, Probable and Possible Case Classification 1996 - 2000

Classification	1996	1997	1998	1999	2000
Definite	34	35	44	26	32
Probable	81	77	66	53	85
Possible	118	100	103	61	86
Total DPP	**233**	**212**	**213**	**140**	**203**
Percent	47%	48%	45%	42%	52%
All cases reported	**500**	**439**	**475**	**332**	**388**

A factor that appears to influence case classification is the time between when an incident occurs and when it is received by DOH. Case files for 2000 show that DOH received 77 percent of reports from health care providers or WPC in five days or less. Two percent of L&I referrals are received within five days. It takes 16 days or greater for 87 percent of pesticide illness reports to make their way from the health care provider to L&I and subsequently to DOH. The longer it takes to receive a report, the greater the proportion of cases that are classified as insufficient information (Table 9).

Table 9 Relationship between Incident Date and Receipt by DOH to Case Classification for Agricultural Worker Compensation Claims* in 2000

Days from incident to receipt by DOH	DOH Case Classification		
	Definite, Probable and Possible	Unrelated and Unlikely	Insufficient information and Suspicious
<=5	71.1%	15.3%	13.6%
6-15	37.5%	18.8%	43.7%
16-25	43.2%	18.9%	33.9%
>25	41.2%	5.9%	52.9%
Overall	51.2%	13.5%	34.3%

N = 167 cases, 4 had missing time information

** Information from NIOSH Grant Activity of Evaluating and Improving the Quality of Data Collected by DOH Pesticide Program.*

This information points to the need to continue efforts to educate health care providers about the recognition of pesticide-related illness and injuries and the importance of timely reporting of suspected illnesses and injuries to DOH.

Table 10 Top Ten Counties with Reported Incidents in 2000

County	Incidents	Individuals
Yakima	65	74
King	30	32
Chelan	26	33
Grant	23	60
Benton	19	28
Okanogan	19	20
Pierce	17	22
Franklin	16	18
Spokane	13	16
Snohomish	10	10

Location

Twenty-seven of the 39 counties in Washington had reports of pesticide illness. Table 10 lists the ten counties with the most reported incidents. Seventy-nine percent of all reports come from these counties. The ten counties account for 69 percent of the state population.

Grant County is fourth on the list with 23 reported incidents but it had the second highest number of exposures (60) because of one incident where 31 people reported symptoms.

Figure 8 shows the location of combined definite, probable, or possible cases for 1999 - 2000.

Figure 8 Combined 1999 - 2000 County Distribution of Cases

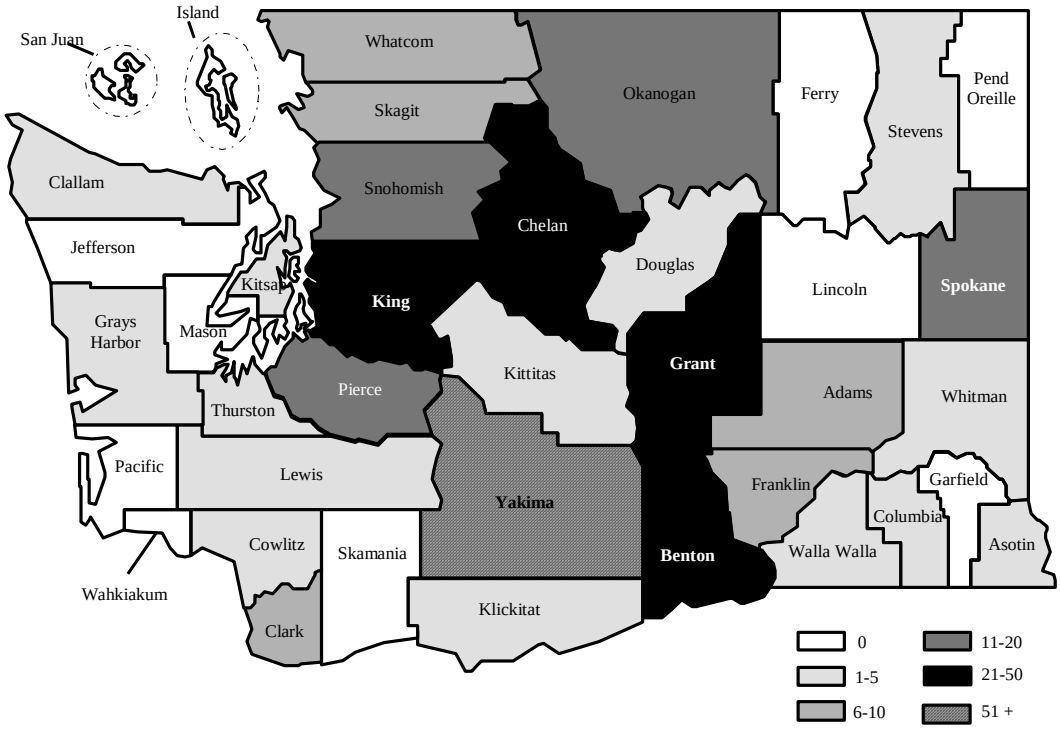


Table 11 Annual Number Agricultural and Non-Agricultural cases*1996 – 2000

Year	Agricultural	Non-Agricultural	Total Cases
1996	97	136	233
1997	92	120	212
1998	102	111	213
1999	68	72	140
2000	113	90	203

** Limited to cases with illness classified by DOH as definitely, probably, or possibly due to pesticide exposure.*

Table 11 displays the number of definite, probable or possible cases investigated in agricultural and non-agricultural settings from 1996 through 2000.

Severity of Medical Outcome

DOH has been coding the severity of health outcome for cases since 1995. The DOH severity matrix was used to classify the 2000 data in the 2002 Legislative Summary. When DOH upgraded the Pesticide data system during 2002, severity data were re-classified using the NIOSH severity classification matrix. (See Appendix C for descriptions of the DOH and NIOSH severity classification codes.)

Using the NIOSH classification, 199 (98%) of the 203 definite, probably or possible cases had mild medical outcomes. Three cases were classified as moderate and one as severe. Using the DOH matrix, 55 cases would have been classified as moderate and 9 would have been classified as severe. Given the differences, severity for 2000 cases will not be compared to prior years.

Number of Persons Involved

More than half (69%) of the 2000 incidents involved one individual. Ten incidents involved two or three people. Three incidents accounted for 24, 10 and 5 cases classified as definite, probable or possible. These incidents are described below:

Case example: A family of five developed symptoms after a helicopter sprayed an adjacent orchard. They were in their back yard when they saw the application drift over their yard and pool. Samples from their trees and pool water were positive for malathion.

Case example: Ten employees of a firm located near fields with a center pivot irrigation system became ill after being exposed to soil fumigant following a chemigation application. The pesticide volatized during a temperature inversion.

Case example: Teachers, students and a school employee became ill after an aerial application to a potato field near school district buildings. The application occurred in the morning shortly before they arrived. Of the 31 reported exposures, 24 were found to be definitely, probably or possibly related to the drift. WSDA tests were positive for pesticide residues around the buildings.

Age and Gender

Males (82) reported more occupational exposures than females (33) (Table 12). Females (48) reported more non-occupational exposures.

There were 31 cases involving children 18 years of age and younger that were determined to be definitely, probably or possibly related to pesticide exposure (Table 12). Fifteen children were at school at the time of their exposure, 14 were at home and two (age 18) were employed.

Table 12 Occupational and Non-occupational cases* by Age and Gender in 2000

Age	Occupational		Non-occupational		Total
	Female	Male	Female	Male	
0 - 5	0	0	7	4	11
6 -11	0	0	2	4	6
12-18	1	1	3	9	14
19-29	8	28	6	3	45
30-49	20	43	19	9	91
50+	3	6	10	8	27
Unk	1	4	1	3	9
Total	33	82	48	40	203

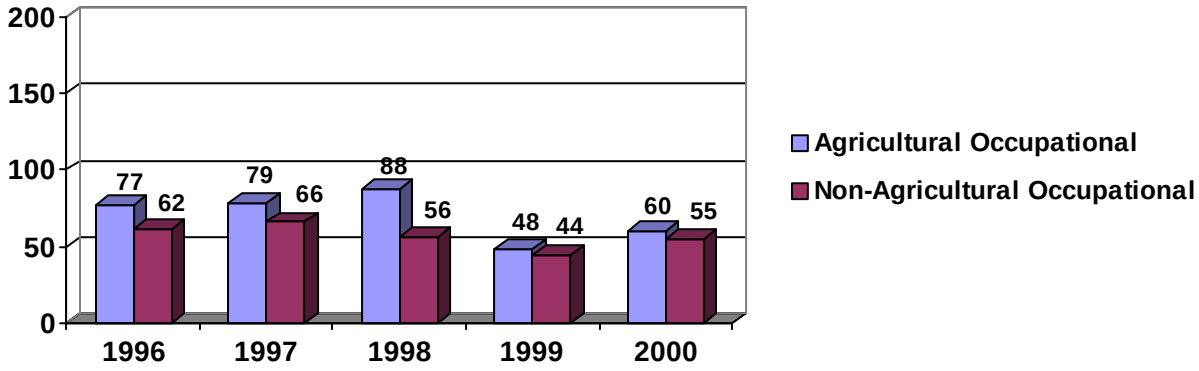
**Limited to cases with illness classified by DOH as definitely, probably, or possibly due to pesticide exposure.*

Section 2: Occupational Cases of Pesticide Related Illness

In 2000, sixty percent (234) of all reported cases investigated by DOH involved a pesticide exposure on-the-job. Of these, 115 were classified as definite, probable or possible exposures. Sixty of the 115 involved agricultural workers and 55 were from other occupations. Figure 9 shows DOH agricultural and non-agricultural occupational case classifications 1996 to 2000.

In addition to the 60 agricultural workers who experienced agricultural exposures, there were 27 non-agricultural workers who were exposed to agricultural releases while on the job. These workers included public utility linemen, construction workers, laboratory workers, teachers, a fire fighter and a truck driver. In one event involving non-agricultural workers, 8 teachers and a school employee were exposed to a drift from an application to a potato field. In another situation, 10 laboratory workers were exposed to a drift from a cornfield application.

Figure 9 Agricultural and Non-Agricultural Occupational Cases 1996 - 2000



Section 3: Agricultural Pesticide Incidents 2000

In 2000, DOH received reports of 229 cases of suspected pesticide-related illness related to agricultural operations. These exposures occurred when the pesticide application was intended for agricultural commodities such as fruit, field crops, greenhouse, nursery, livestock, shellfish, and forest operations. Of the 229 cases, DOH classified 113 as definite (14), probable (61) and possible (38). Half of the agricultural cases were exposed to pesticide drift (Table 13).

Table 13 Agricultural Occupational and Non-occupational Cases by Source in 2000*

Source	Occupational	Non-occupational	Total
Drift	34	25	59
Spray	17	0	17
Contact (spill, leaking equipment)	20	1	21
Residues (treated surface)	12	0	12
Unknown source	5	0	5
Total	88	26	114**

**Limited to cases with illness classified by DOH as definitely, probably, or possibly due to pesticide exposure.*

*****One case had more than one source of exposure.***

Relationship of Illness/Injury to Work Activity for Agricultural Pesticide Cases

Table 14 compares the type of illness/injury, classified as definite, probable or possible, from agricultural applications among two groups of workers (handlers and general/routine workers) by work activity and route of exposure or type of application.

Table 14 Agricultural Related Occupational Pesticide–Related Illnesses and Injury Status* Summarized by Equipment/Exposure Mechanism and Type of Illness/Injury in 2000**

Activity	Equipment/ Exposure mechanism	Systemic/Respiratory/Topical				Topical Only				Total	
		Def/Prob	Pos	Susp	Insf	Def/Prob	Pos	Susp	Insf	DP/P	S/I
Applicator Ground	Ground	2	5	1	3	11	4	2	4	13/9	3/7
	Hand	1	1		1	2				3/1	0/1
	Other	1	1			1				2/1	0/0
	Fumigation	1								1/0	0/0
Mixer/Loader	Aerial					1				1/0	0/0
	Ground	2	1	1	1	4				6/1	1/1
	Other					1				1/0	0/0
Sub totals		**7**	**8**	**2**	**5**	**20**	**4**	**2**	**4**	**27/12 (39)**	**4/9 (13)**
Routine Work Activity	Drift, aerial	12	2	1	1	1				13/2	1/1
	Drift, ground	4	4	1	2	1		2	1	5/4	3/3
	Drift, Chemigation	8					1			8/1	0/0
	Surface	1	7	4	6	2		5	7	3/7	9/13
	Contact	1			2	1			1	2/0	0/3
	Other/Unk				4	1		2	2	1/0	2/6
Sub total		**26**	**13**	**6**	**15**	**6**	**1**	**9**	**11**	**32/14 (46)**	**15/26 (41)**
Total		**33**	**21**	**8**	**20**	**26**	**5**	**11**	**15**	**59/26**	**19/35**

**Case Status Classifications: Definite, Probable, Possible, Suspicious and Insufficient Information. See Appendix C.*

***Type of illness/injury: Systemic: Any health effects not limited to the skin and/or eye.*
Respiratory: Health effects involving any part of the respiratory tree.
Topical: Health effects involving only the eyes and/or skin.

Of the 39 agricultural pesticide handlers (mixers, loaders, applicators and pesticide equipment maintenance workers) 62% (24) experienced topical illness/injury without systemic effects. Fifteen (38%) had a combination of systemic, respiratory and topical complaints. Of the 46 general/routine workers not involved with application (thinners, harvesters, general farm labor and other workers), only 15% complained of topical illness/injury. A greater number (39 (83%)) of general workers complained of a combination of systemic, respiratory and topical symptoms than did handlers.

Thirty-three (72%) of general/routine workers with illness/injury reported drift as the cause of the injury. Drift remains a significant source of pesticide exposure from agricultural operations.

More general worker illness (47%) was classified as suspicious or lacking sufficient information to classify than handler illness (26%). This is especially true for cases with dermatological diagnosis. A review of agricultural industrial insurance claims for year 2000 found that 55 per cent of cases with dermatological medical diagnoses were classified as suspicious or insufficient information and 33 percent of all claims classified as suspicious or insufficient information had dermatological diagnoses. A possible reason for this prevalence may be that, without significant and costly testing, the health care provider has difficulty knowing whether a dermatological

condition is due to pesticide residues, exposure to foliage or an external factor not related to work. This often leads to a DOH classification of suspicious or insufficient information.

Relationship of Injuries by Causal Pesticide

In 2000, there were 85 workers with illness/injury classified as definitely, probably or possibly (DPP) related to agricultural activities. There were 39 DPP cases where the individual's activity was mixing/loading (8), applying (30) and repair/transport (1). Thirteen of the 39 (33%) cases reported exposures where the pesticide products included AChE inhibitors. Twenty-six individuals (67%) reported illness from exposures to non-AChE inhibiting compounds. Table 15 shows the relationship between the illnesses for cases classified as DPP and the pesticides.

Table 15 Type of Illness and Injuries* for Mixers/Loaders/Applicators by Pesticide Active Ingredient in 2000**

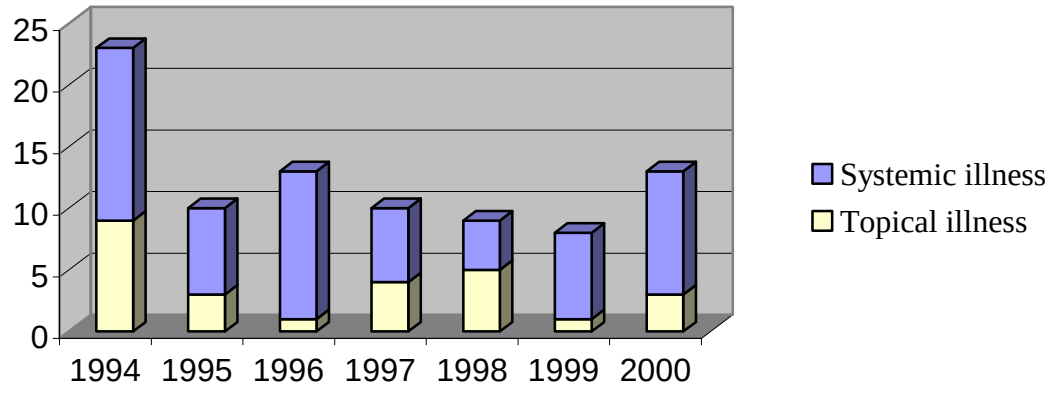
Pesticide	Systemic/Respiratory		Topical Only	
	Definite/ Probable	Possible	Definite/ Probable	Possible
Cholinesterase Inhibitors				
Azinphos-methyl		1	1	
Carbofuran				
Chlorpyrifos		2		
Combinations of insecticides with AchE inhibitors	3	4	2	
Sub Totals	**3**	**7**	**3**	**0**
Non-Cholinesterase Inhibitors				
Alachlor			1	
Algicide			1	
Ethephon			1	
Fatty Acids			1	
Glyphosate			5	
Gramoxone	1			1
Isomate-C			1	
Kaolin			1	
Mefenoxam			1	
NAA		1		
Oxyfluorfen				1
Sulfur	1		1	
Combinations of insecticides without AchE inhibitors(s)	2			1
Sub Totals	**4**	**1**	**13**	**3**
Fumigants				
Aluminum-phosphide		1		
1-3 Dichloropropene			1	
Metam-sodium			1	
Methyl-bromide	1		1	
Sub Totals	1	1	3	0
Totals	**8**	**9**	**19**	**3**

**Type of illness/injury:* Systemic: Any health effects not limited to the skin and/or eye.
Respiratory: Health effects involving any part of the respiratory tree.
Topical: Health effects involving only the eyes and/or skin..

***Limited to cases with illness classified by DOH as definitely, probably, or possibly due to pesticide exposure.*

Because of the current interest in the medical monitoring of workers who mix, load, apply pesticides or maintain spray equipment and who have exposure to AChE inhibiting insecticides, exposure data for the past seven years were reviewed. Figure 10 shows the trend for topical and systemic illness for this group of agricultural workers.

Figure 10 Systemic and Topical Illness/Injury* Trend for Agricultural Workers Who Handle AChE Inhibitors Via Mixing, Loading, Applying or Repairing Equipment 1994-2000



** Cases classified by DOH as definitely, probably or possibly due to pesticide exposure.*

Table 16 shows the number exposed to AChE inhibiting insecticides, singularly or in tank mixed combinations.

Table 16 Illness and Injury Type* for Agricultural Mixer/Loaders/Applicators/Equipment Maintenance Workers by Cholinesterase Inhibiting Pesticides 1994 - 2000**

Pesticide	1994		1995		1996		1997		1998		1999		2000		Totals	
	Sys	Top	Sys	Top	Sys	Top	Sys	Top	Sys	Top	Sys	Top	Sys	Top	Sys	Top
Azinphos methyl	1				2			1	2				1	1	9	3
Chlorpyrifos		3	1						1				2		8	5
Diazinon							1								1	0
Dimethoate					1										1	0
Malathion		1			1										3	1
Phorate											1				1	0
Unknown OP		1													0	1
Carbaryl	1														2	0
Carbofuran	5														6	0
Oxamyl		1													0	1
Combinations of AChE Inhibitors with other Products	7	3	6	3	7	1	6	3	1	5	6	1	7	2	66	22
Totals	**14**	**9**	**7**	**3**	**11**	**1**	**7**	**4**	**4**	**5**	**7**	**1**	**10**	**3**	**98**	**33**

**Type of illness/injury: Sys = Systemic: Any health effects not limited to the skin and/or eye*
Top = Topical: Health effects involving only the eyes and/or skin.
***Limited to cases with illness classified by DOH as definitely, probably or possibly due to pesticide exposure.*

The total numbers have not varied much over the past several years and the total number of individuals reporting symptoms appears to be low relative to the numbers involved in these activities. The low number of cases related to AChE inhibitors may be explained by:

- Removal or limiting use over the past several years of the more acutely toxic AChE inhibiting compounds (e.g., Parathion [1991], Phosphamidon [1991] and Mevinphos [1994]),
- Less use of AChE compounds because of increased worker re-entry times,
- Movement away from the use of AChE inhibiting compounds by growers because of alternatives such as biocontrol (mating disruption by pheromones),
- Greater use of closed systems (load and lock), and
- Greater implementation of Integrated Pest Management, and greater emphasis on education and safety through licensing certification and re-certification.

Using the NIOSH severity classification system, 112 of the 113 agricultural cases (99%) had mild medical outcomes. One orchardist experienced moderate symptoms after methyl bromide was sprayed up his leg. No agricultural cases were classified as having severe symptoms.

Agricultural Crops Involved

Of the 113 agricultural definite, probable or possible cases, 109 were the result of pesticide applications and four involved spills or leaking equipment. The crops involved were fruit (57), field crops (45), landscape ornamentals (3) vegetables (2), livestock (1) and weeds in an orchard (1) (Table 17).

Cases resulting from applications to fruit

Half (57) of pesticide illnesses in agriculture occurred in the production of fruit (Table 17). The majority (48) of the cases were on the job at the time of the exposure. Forty-six of the workers were employed in agriculture and two were construction workers who were drifted. Twenty-six of the agricultural workers were applying, mixing or loading pesticides or repairing pesticide equipment. Twenty-two of the workers were pruning trees or thinning/picking fruit at the time of exposure. Seven cases were non-occupational outdoor exposures. The majority (35) of cases occurred in the production of apples.

Of the 57 cases exposed to fruit production pesticide use, 20 exposures were attributed to drift, 17 to direct spray, 12 to field residues, four persons came in contact with a spill or leaking container and the source was unknown for four.

Cases resulting from applications to field crops

Forty-five cases were due to pesticide applications to field crops (Table 17). The field crops included potatoes, corn, wheat, grass seed and hops. Thirty of the 45 cases were occupational. Pesticide drift (40) was the type of exposure most frequently associated with pesticide illness.

In 2000, seven of the 45 (16%) field crop exposures were agricultural workers. Five of the seven workers were applying pesticides at the time. One was repairing an irrigation line and one was driving tractor when he received drift from an aerial application.

Table 17 Agricultural Exposures by Activity and Target in 2000*

	Applying	Mix/load/ repair/ transport	Other work	Outdoor living	Indoor living	Total
Fruit (57)						
Apples	15	2	15	3		35
Pears	3		2			5
Cherries	1	1	3	5		10
Nectarines		1				1
Peaches				1		1
Grapes	1			1		2
Unknown kind	2		1			3
Field Crops (45)						
Hops	2		1			3
Potatoes			13	1	14	28
Grass seed	2					2
Corn		1	11			12
Vegetables (2)						
Peas				1		1
Onions	1					1
Ornamentals/Weeds	3	1				4
Veterinary			1			1
No application		3	1**			4
Totals	30	9	48	12	14	113

** Limited to cases with illness classified by DOH as definitely, probably, or possibly due to pesticide exposure.*
***Emergency response*

Four incidents accounted for 38 (84%) of the field crop cases. Ten laboratory workers received drift exposures from an application to field corn. Eight teachers, a school employee and 15 students were ill after three schools were drifted from an early morning application to a potato field. Three public utility workers were drifted from another potato application. In a separate incident a telephone lineman was exposed to residues from a soil fumigant.

Cases occurring in nurseries or greenhouses
Six occupational cases occurred in nurseries or greenhouses. Four workers were applying pesticides at the time of their exposure, one was mixing a container of disinfectant and algaecide and one was drifted by an aerial application while she was counting cherry trees.

Section 4. Non-Agricultural Pesticide Incidents

Of the 388 cases investigated in 2000, 159 were associated with non-agricultural pesticide use. DOH considered 90 (57%) of these to be definitely, probably or possibly related to pesticide exposure (Table 18). Examples of non-agricultural incidents are pesticide applications or spills at homes, commercial buildings, industrial sites, roadways or parks.

Seventy-one (79%) of all non-agricultural exposures occurred at residential or commercial sites. Of the 90 non-agricultural exposures, 28 (31%) were occupational and 62 (69%) were non-occupational (Table 18).

Table 18 Exposure Site for Non-Agricultural Pesticide Use in 2000*

	Occupational	Non-occupational
Residential building or grounds (home, apt)	7	53
Residential institution (dorm, nursing home, homeless shelter, prison)	3	3
Office or retail businesses	5	
Industry or manufacturing facilities	5	
Roads or Park	2	5
Cargo ship	3	
Other and unknown	3	1
Total non-agricultural pesticide use	28	62

** Limited to cases with illness classified by DOH as definitely, probably, or possibly due to pesticide exposure.*

Non-agricultural Occupational

Of the 28 non-agricultural cases that occurred on-the-job, 17 were males and 11 were females. Ten of the 28 workers were applying the pesticide at the time of exposure.

Route of exposure

Eight of the workers were exposed to insecticide applications to buildings, five were exposed to herbicide applications and seven were exposed to releases other than applications including pesticide products falling off of shelves or out of vehicles (Table 19).

Table 19 DOH Application Target for Non-agricultural, Occupational Exposures in 2000*

Application Target	***Exposures***
Building structure, surface or space	8
Spill or other release - no application made	7
Undesired plant	5
Soybean meal (crewmen on cargo ship exposed to fumigant)	3
Landscape ornamental at residence	1
Fruit crop (teacher exposed to drift from residential application)	1
Clothing (employee treated patient bedding for lice)	1
Total	28

**Limited to cases with illness classified by DOH as definitely, probably, or possibly due to pesticide exposure.*

Severity

Of the 28 occupational, non-agricultural exposures, 27 were classified as mild outcomes and one was classified as moderate. The moderately ill person was a construction worker who was splashed in the face from an open can of fungicide.

Non-agricultural Non-occupational

Of the 62 non-agricultural, non-occupational cases over the age of 17, there were more women (30) than men (19). Thirteen cases were children less than 18 years of age and 10 were persons age 60 and older. The majority of non-occupational cases (53 (85%)) occurred in homes or apartments. See Table 18 above.

Twelve of the 13 children with non-agricultural exposures were exposed at home. Of these, four (all under the age of four) received medical treatment for eye exposures to lice shampoo. Four children became ill after their home or pet was treated with a pesticide. Three children became ill after putting a pesticide in their mouths and a container of livestock pesticide fell on one three year old.

Route of exposure
Twenty-eight (45%) of the non-agricultural and non-occupational pesticide cases involved the person making the application.

Fifty-two of the 62 non-occupational cases were from pesticide applications (Table 20). Of these, 19 cases were exposed to landscape or garden applications for insects or unwanted weeds, 18 cases involved insecticide applications in and around structures, and 11 involved applications directly to pets, skin or hair. Of the 8 applications to people, seven involved misapplications of the products and one involved a delusional patient.

Forty-four (66%) exposures resulted from applications made by non-professional applicators (i.e., unlicensed persons such as home-owners or co-workers) and nine cases (15%) were associated with professional pesticide applications. Ten cases did not involve applications. These included six exposures from broken pesticide containers and four cases of accidental ingestion.

Table 20 Target Pest for Non-agricultural Non-occupational Cases Associated with Pesticide Applications in 2000

Landscape/garden use:	***Exposures***
Insects	10
Weeds and moss	9
Use in/around structures:	
Single family home	12
Apartment	3
Mobile home	1
Homeless shelter	1
Dormitory	1
Applications to people:	
Lice shampoo	5
Mosquito repellent	1
Scabies treatment	1
Wasp spray	1
Other:	
Bedding flea treatment	1
Pet flea treatment	2
Roadway soil	3
Treated firewood	1
Total	**52**

**Limited to cases with illness classified by DOH as definitely, probably, or possibly due to pesticide exposure.*

Department of Labor and Industries (L&I)

L&I responds to concerns from workers exposed to pesticides through two divisions: the Washington Industrial Safety and Health Act (WISHA) Services Division, and the Insurance Services Division, Claims Administration Program. In 2000, L&I WISHA Services Division conducted 34 investigations involving pesticide handling and use complaints with 30 resulting in citations being issued against the employer (Section 1). The Insurance Services Division, Claims Administration Program received 180 claims relating to pesticide illness (Section 2).

Section 1: WISHA Service Division

WISHA Services Division staff address safety and health issues in the workplace. WISHA enforcement staff may issue citations that require employers to implement changes in the workplace, assign penalties to serious violations, and perform follow-up inspections to assure compliance.

Table 21 WISHA Workplace Safety and Health Inspections in 2000

Workplace Type	#	Percent
Orchards	24	70
Other farms (berries, potatoes)	3	9
Crop preparation companies	3	9
Pest control company	1	3
Nursery	1	3
Dairy	1	3
Mushroom farm	1	3
Total	34	100

For year 2000, WISHA staff performed 34 pesticide related safety and health investigations in the workplace (Table 21); 31 in Eastern Washington and 3 in Western Washington. These investigations occurred in both agricultural and nonagricultural environments. Twenty-four involved orchards. The remaining included three other farms (berries, potatoes), three crop preparation companies, one pest control company, one nursery, one dairy and one mushroom farm.

Five of the 34 were employee or employee representative initiated complaints. Eight investigations were the result of referrals from within the agency or from other state agencies. Nineteen were scheduled inspections randomly selected from the L&I scheduling list.

Violations were discovered in 30 of the 34 investigations (15 had monetary penalties). The following violations were most frequently cited:

1. inadequate decontamination supplies and emergency eyewash facilities
2. inadequate hazard communication program
3. inadequate Personal Protective Equipment (PPE) supplied, maintained and storage location
4. inadequate respirator program or fit testing
5. incomplete or no spray records and central posting to inform employees of pesticide applications
6. no accident prevention, safety meetings
7. lack of hazardous chemical labeling
8. no first aid training, kits, or cards

Section 2: L&I Claims Insurance Services Division, Claims Administration Program

The Insurances Services Division, Claims Administration Program, processes worker claims initiated by on-the-job injuries and illnesses including claims involving pesticides. In 2000, there were 180 L&I claims involving pesticides. This compares with 183 in 1999 and 269 in 1998 (Table 22).

Of the 180 claims in 2000, 126 (70%) were compensated by L&I as being work-related, if not pesticide-related, injuries. The initial medical visits were paid for 99 percent of the claims. The claims were determined in accordance with the following definitions:

Medical Only/Non-Compensable Claim: A worker experienced symptoms that he/she believes occurred from exposure on-the-job and seeks medical evaluation. The physician finds the symptoms related to the exposure and there is objective evidence of injury. Therefore, the claim is allowed and medical evaluation and any follow-up medical care/treatment costs are paid. The employee misses less than three days of work. These lost workdays are not reimbursed to the employee.

Time Loss/Compensable Claim: A worker has an allowable claim and misses more than three days of work immediately following an exposure on the job. The worker is paid a portion of salary while unable to work. All related medical costs are covered.

Rejected Claims: Initial diagnostic and evaluation medical costs are covered but the claim is rejected because objective evidence is lacking to relate the symptoms to the workplace exposure. Many claims are rejected because the symptoms have resolved by the time treatment is obtained; there is no objective evidence of injury; or, exposure cannot be confirmed or documented. A rejected status prevents the worker from reopening a claim based on original symptoms. Costs of initial medical visits are usually paid.

Pending: Additional information is being collected on the claim before a determination can be made.

Kept on Salary: The employer elects to pay the claimant's salary instead of L&I paying time loss payments while the employee is recovering from an injury or illness.

Table 22 Status of L&I Claims Related to Pesticides 1996 - 2000

Claim Type	1996		1997		1998		1999		2000	
Medical Only/ noncompensable	97	44%	108	46%	155	58%	107	59%	115	64%
Time loss/ compensable	8	4%	14	6%	11	4%	11	6%	11	6%
Rejected	111	50%	101	43%	100	37%	63	34%	52	29%
Pending/Unknown	5	2%	12	5%	2	1%	1	1%	2	1%
Kept on salary	1	--	--	--	1	--	1	1%	--	--
Total	222		235		269		183		180	

L&I refers all claims involving pesticides to DOH. After investigation, DOH classified 80 of the 180 claims as having signs and/or symptoms definitely, probably or possibly related to pesticide exposure.

In 2000, 132 (73%) claimants were exposed while working in agriculture and 48 (27%) were in a non-agricultural setting. Four of the non-agriculture workers were exposed to agricultural pesticide drifts. Ninety-six claims involved workers in the fruit industry and 14 were in field and vegetable crops (Table 23).

Table 23 L&I Pesticide Related Claimants by Business Type in 2000

Agricultural	Number	Percent
Fruit	96	53%
Field crops	9	5%
Vegetables	5	3%
Landscape ornamentals	4	2%
Other/Unknown	18	10%
Total agricultural	**132**	**73%**
Non agricultural		
Manufacturing/warehouse	12	7%
Landscaping/Pest Control	7	4%
Retail	7	4%
Office	6	3%
Construction	5	3%
Truckers	2	1%
Nursing home	1	.5%
Fire fighter (spraying weeds)	1	.5%
Other	7	4%
Total non-agricultural	**48**	**27%**
Total pesticide-related claims	**180**	**100%**

The following L&I claims and DOH investigation summaries illustrate the type of incident that occurs in the agricultural occupational environment:

Case example: An applicator was applying an insecticide to pears. He was wearing appropriate personal protective equipment (PPE) but took off his raingear because the weather was hot. This left his head and neck unprotected. Shortly after removing his PPE, he developed topical symptoms. Classification: Definite.

Case example: A farm worker developed systemic symptoms after he placed aluminum phosphide tablets in the ground. He wore a respirator and rubber gloves. Canvas gloves are recommended for handling fumitoxin tablets. The ground was wet and his hands became wet from sweat. Classification: Possible.

The following L&I claims and DOH investigation summaries illustrate the type of incident that occurs in the non-agricultural occupational environment:

Case example: A construction worker developed symptoms after he splashed fungicide from an open can in his face. He was using the fungicide to treat logs for log homes. He immediately sought treatment at the ER. Classification: Definite.

Case example: A roofer was spraying a bee's nest over his head with an insecticide. He was wearing goggles but it was windy and the spray blew on his face and arms. He showered at home. Over night his eye became swollen and painful. He sought treatment the next day. Classification: Probable.

Case example: A caregiver at a retirement home sprayed a client's bedding with lice spray. She immediately developed a cough and tightness of chest that developed into an asthmatic attack. She was taken to the hospital for treatment. Classification: Probable.

Washington Poison Center

In 2000, the Washington Poison Center (WPC) received 118,404 statewide calls. This was an 11 percent decrease in calls from 1999. As has been the case since 1994, two percent of the WPC calls were related to pesticides (Table 24). Total calls to WPC include intentional and unintentional human exposures, animal exposures, confirmed non-exposures and calls for information. Only human exposure calls are tallied in the pesticide-related calls.

Table 24 WPC Human Exposure Pesticide Calls 1996 - 2000

Pesticide	1996	1997	1998	1999	2000
Fungicide	120	88	72	61	99
Herbicide	441	482	485	425	453
Insecticide/insect repellent	1,992	2,103	1,886	1,562	1,330
Moth repellent	66	77	65	76	50
Rodenticide	473	477	478	399	394
Total	**3,092**	**3,227**	**3,002**	**2,523**	**2,326**
% of Total Calls to WPC	2%	2%	2%	2%	2%
Total WPC Calls*	**135,621**	**132,649**	**134,605**	**133,240**	**118,404**

**Includes human and animal exposures, confirmed non-exposures and information calls.*

Pesticide poisonings are a reportable condition in Washington State (WAC 246-100-217). WPC provides DOH information on all calls regarding patients exposed to pesticides and seen by a health care provider. When WPC refers a caller to any health care provider, this information is also provided to DOH.

In 2000, DOH received 204 referrals from WPC where there were reported signs and/or symptoms of pesticide illness or when a pesticide exposure needed to be followed for development of symptoms. Of the 204 referrals, 105 (51%) did not meet the DOH criteria for investigation in that the exposure had occurred more than 3 months before the report, no exposure-health effect relationship seemed to be present, or there was insufficient information to substantiate actual pesticide exposure.

There were 113 individuals involved in the remaining 99 incidents. DOH classified the 113 pesticide exposures as definite (17), probable (16), possible (37), suspicious (11), unlikely (6), insufficient information (15), asymptomatic (3) and unrelated (8). Using the NIOSH severity classification, the majority of these cases had mild or no symptoms (107), 2 had moderate symptoms, and 4 had severe symptoms.

Forty percent of the WPC pesticide calls involved children less than six years of age. Table 25 illustrates WPC calls by pesticide type for the different age groups. More than half (1330 (57%)) of the pesticide cases involved insecticides and insect repellents. Twenty percent involved herbicides.

Table 25 WPC Human Exposure Pesticide Calls by Age in 2000

Pesticide Type	<6 years old	6-19 years old	>19 years old	Total Human Exposure Calls
Fungicides	13	12	71	99
Herbicides	123	59	269	453
Insecticides	382	154	657	1229
Insect repellents	71	20	10	101
Moth repellents	32	2	16	50
Rodenticides	304	22	64	394
Total*	925	269	1,087	2,326

**Age was unknown for 45 exposures*

Table 26 lists the types of insecticides involved in calls to WPC in 2000. Note that an incident frequently involves more than one type of pesticide in the product.

Table 26 WPC Type of Insecticide involved in Poisoning Call 1996 - 2000

Insecticides and insect repellents generic code/description	Number of calls				
	1996	1997	1998	1999	2000
Arsenic	7	5	5	10	10
Borates/Boric Acid	27	32	32	20	28
Carbamate Only	61	91	64	65	29
Carbamate with other pesticides	24	15	8	18	11
Chlorinated Hydrocarbon only	125	130	104	72	61
Chlorinated Hydrocarbon with other	8	3	6	3	3
Metaldehyde	76	80	48	36	43
Organophosphate only	360	395	372	267	301
Organophosphate with carbamate	15	17	14	11	3
Organophosphate with chlorinated hydrocarbons	9	4	12	3	6
Organophosphate with other pesticide	44	32	35	33	36
Organophosphate/carbamate/chlorinated hydrocarbons	0	1	2	0	1
Piperonyl butoxide only	5	3	1	2	3
Piperonyl butoxide/pyrethrins	323	306	266	239	131
Pyrethrins only	253	267	262	235	173
Repellents (insect)	144	154	130	107	101
Rotenone	3	5	2	3	1
Veterinary insecticide	179	277	215	194	135
Other	128	89	92	69	112
Unknown	200	197	216	174	142
Total	**1,992**	**2,103**	**1,886**	**1,562**	**1,330**

Most (93%) of pesticide-related calls to WPC involved unintentional exposure. Approximately three percent of pesticide calls involve intentional exposures. Eighteen percent of all pesticide calls were managed in health care facilities, and three percent of these exposure calls reported a moderate or more severe illness (WPC definitions) from the event.

Appendix A

Pesticide Incident Reporting and Tracking (PIRT) Review Panel:

- **RCW 70.104.070-090**
- **List of PIRT Panel Members**
- **Pesticide Incident Definition**
- **Agency Roles and Responsibilities**
- **Agency Response Time Mandates**

RCW 70.104.070 Pesticide incident reporting and tracking review panel -- Intent. The legislature finds that heightened concern regarding health and environmental impacts from pesticide use and misuse has resulted in an increased demand for full-scale health investigations, assessment of resource damages, and health effects information. Increased reporting, comprehensive unbiased investigation capability, and enhanced community education efforts are required to maintain this state's responsibilities to provide for public health and safety.

It is the intent of the legislature that the various state agencies responsible for pesticide regulation coordinate their activities in a timely manner to ensure adequate monitoring of pesticide use and protection of workers and the public from the effects of pesticide misuse.

[1989 c 380 § 67.]

Severability -- 1989 c 380: See RCW 15.58.942.

RCW 70.104.080 Pesticide panel -- Generally.

(1) There is hereby created a pesticide incident reporting and tracking review panel consisting of the following members:

(a) The directors, secretaries, or designees of the departments of labor and industries, agriculture, natural resources, fish and wildlife, and ecology;

(b) The secretary of the department of health or his or her designee, who shall serve as the coordinating agency for the review panel;

(c) The chair of the department of environmental health of the University of Washington, or his or her designee;

(d) The pesticide coordinator and specialist of the cooperative extension at Washington State University or his or her designee;

(e) A representative of the Washington poison control center network;

(f) A practicing toxicologist and a member of the general public, who shall each be appointed by the governor for terms of two years and may be appointed for a maximum of four terms at the discretion of the governor. The governor may remove either member prior to the expiration of his or her term of appointment for cause. Upon the death, resignation, or removal for cause of a member of the review panel, the governor shall fill such vacancy, within thirty days of its creation, for the remainder of the term in the manner herein prescribed for appointment to the review panel.

(2) The review panel shall be chaired by the secretary of the department of health, or the secretary's designee. The members of the review panel shall meet at least monthly at a time and place specified by the chair, or at the call of a majority of the review panel.

[1994 c 264 § 41; 1991 c 3 § 363; 1989 c 380 § 68.]

Severability -- 1989 c 380: See RCW 15.58.942.

RCW 70.104.090 Pesticide panel -- Responsibilities. The responsibilities of the review panel shall include, but not be limited to:

(1) Establishing guidelines for centralizing the receipt of information relating to actual or alleged health and environmental incidents involving pesticides;

(2) Reviewing and making recommendations for procedures for investigation of pesticide incidents, which shall be implemented by the appropriate agency unless a written statement providing the reasons for not adopting the recommendations is provided to the review panel;

(3) Monitoring the time periods required for response to reports of pesticide incidents by the departments of agriculture, health, and labor and industries;

(4) At the request of the chair or any panel member, reviewing pesticide incidents of unusual complexity or those that cannot be resolved;

(5) Identifying inadequacies in state and/or federal law that result in insufficient protection of public health and safety, with specific attention to advising the appropriate agencies on the adequacy of pesticide reentry intervals established by the federal environmental protection agency and registered pesticide labels to protect the health and safety of farmworkers. The panel shall establish a priority list for reviewing reentry intervals, which considers the following criteria:

(a) Whether the pesticide is being widely used in labor-intensive agriculture in Washington;

(b) Whether another state has established a reentry interval for the pesticide that is longer than the existing federal reentry interval;

(c) The toxicity category of the pesticide under federal law;

(d) Whether the pesticide has been identified by a federal or state agency or through a scientific review as presenting a risk of cancer, birth defects, genetic damage, neurological effects, blood disorders, sterility, menstrual dysfunction, organ damage, or other chronic or subchronic effects; and

(e) Whether reports or complaints of ill effects from the pesticide have been filed following worker entry into fields to which the pesticide has been applied; and

(6) Reviewing and approving an annual report prepared by the department of health to the governor, agency heads, and members of the legislature, with the same available to the public. The report shall include, at a minimum:

(a) A summary of the year's activities;

(b) A synopsis of the cases reviewed;

(c) A separate descriptive listing of each case in which adverse health or environmental effects due to pesticides were found to occur;

(d) A tabulation of the data from each case;

(e) An assessment of the effects of pesticide exposure in the workplace;

(f) The identification of trends, issues, and needs; and

(g) Any recommendations for improved pesticide use practices.

[1991 c 3 § 364; 1989 c 380 § 69.]

Effective date -- 1989 c 380 §§ 69, 71-73: "Sections 69 and 71 through 73 of this act shall take effect on January 1, 1990." [1989 c 380 § 90.]

Severability -- 1989 c 380: See RCW 15.58.942.

Table 27 PIRT Panel Representatives 2000

Department of Health (DOH):	Maryanne Guichard, Chairman
Department of Health (DOH):	Jane C. Lee, Coordinator
Department of Agriculture (WSDA):	Ann Wick
Department of Ecology (Ecology):	Maria Victoria Peeler
Department of Fish and Wildlife (WSFW):	John Carleton
Department of Health (DOH):	Lynden Baum
Department of Labor and Industries (L&I)	Janet Kurina
Department of Natural Resources (DNR):	Vacant
General Public:	Alice Larson, Ph.D.
Practicing Toxicologist:	Lucio G. Costa, Ph.D., DABT
University of Washington (UW):	Matthew Keifer, MD
Washington Poison Center (WPC):	William O. Robertson, MD
Washington State University (WSU):	Allan Felsot, Ph.D.

PESTICIDE INCIDENT REPORTING AND TRACKING (PIRT) REVIEW PANEL

PESTICIDE INCIDENT DEFINITION

A pesticide incident includes:

- Documented or suspected human cases of pesticide poisoning reported by health care providers as stated in WAC 246-100.
- Suspected pesticide poisoning of animals that may relate to human illness.
- Cases of human exposure where there is concern, but no medical evidence to substantiate a pesticide poisoning.
- Emergencies relating to pesticides that represent an imminent and/or future hazard to the public and/or labor force due to the toxicity of the material, the quantities involved, or the environment in which the incident occurs.
- Documented impacts to the environment including ground, surface water or soil contamination, crop or other resource damage due to the use or misuse of pesticides.
- Violations of worker protection-related to pesticide use.
- Property loss or damage from the use or application of any pesticide.

A pesticide incident appropriate for review by the PIRT Panel includes a case or situation where information received by Departments such as Agriculture, Health, or Labor and Industries indicates that the use of a pesticide may be related to a current or future threat to the public health and welfare.

A pesticide incident appropriate for resolution by the PIRT Panel is any case described above for which unresolved issues remain after agencies have conducted investigations. Incidents concerning human health are given top priority.

Adopted April 19, 1990

Contact: Lynden Baum, Manager
Pesticide and Surveillance Section
(360) 236-3361

Primary Agency Responsibilities Related to Pesticide Exposure

Washington State Department of Agriculture

The Washington State Department of Agriculture (WSDA) is responsible for protection of health, welfare, and the environment under authority of the Pesticide Control Act and the Pesticide Application Act. These laws give the department the authority to regulate the handling, transportation, storage, distribution, use, and disposal of pesticides and their containers. WSDA administers the Federal Insecticide, Fungicide, and Rodenticide Act and the state pesticide laws. In administering these programs, WSDA:

- adopts and administers pesticide regulations including state pesticide registration;
- tests and certifies pesticide applicators;
- administers continuing education requirements for pesticide applicators; and,
- investigates complaints of pesticide misuse or misapplication.

Department of Health

The Department of Health (DOH) is responsible for carrying out rules and regulations adopted by the State Board of Health for the purposes of protecting and enhancing public health and welfare. This includes the determination and documentation of health effects resulting from pesticide poisonings and exposures, and delineation of public health risks. The major elements of DOH's Pesticide and Surveillance Section set forth in RCW 70.104.030 include:

- Conduct medical investigations of suspected human pesticide poisonings and those animal poisonings that may relate to human illness.
- Provide technical assistance regarding health effects and risks of pesticides to health care providers, other agencies, and individuals.
- Provide community information regarding health effects of pesticide exposure.
- Secure and provide for analysis of environmental samples or human and animal tissues to determine the nature and cause of any suspect case of pesticide poisoning.
- Establish, chair, and staff the multi-agency Pesticide Incident Reporting and Tracking review Panel (PIRT).
- Establish pesticide illness/exposure reporting mechanisms to be used by health care providers.
- Develop a program of medical education for physicians and other health care providers regarding pesticide poisonings.

Department of Ecology

The Department of Ecology (Ecology) is responsible for protection of public health and the environment, particularly under these jurisdictions: Chapter 90.48 RCW, Water Pollution Control; Chapter 70.105D RCW, Hazardous Management Act; Chapter 70.105D RCW, Model Toxics Control; and, Chapter 70.94 RCW, Washington Clean Air Act. The following elements apply to pesticide incidents.

- Protect wetlands, shorelands, and water including control and prevention of pollution from pesticide activities.
- Implement an aquatic pesticide application permit system.
- Administer a regulatory and education program directed at proper management and disposal of pesticide wastes.
- Investigate and enforce remediation of incidents involving spills or environmental contamination by pesticides.
- Provide educational and technical assistance to make voluntary compliance with environmental laws easier.

Department of Labor and Industries

The Department of Labor and Industries (L&I), the Division of Industrial Safety and Health, administers the Washington Industrial Safety and Health Act of 1973, Chapter 49.17 RCW. L&I has primary responsibility for ensuring that employers provide safe and healthful working conditions for every worker in Washington State at a level which is at least as effective as the Federal Occupational Safety and Health Act of 1970. In administering Chapter 49.17 RCW, L&I:

- conducts safety and health workplace inspections in agriculture and industry;
- promulgates workplace safety and health standards;
- investigates employee complaints;
- provides employers information and consultation; and,
- conducts training and education programs.

L&I also focuses on hazardous chemicals through administration of the Worker Right to Know Law, Chapter 49.70 RCW, and administers the Workers Compensation Program, Title 51 RCW, through the Division of Industrial Insurance.

Department of Natural Resources

The Department of Natural Resources administers the Forest Practices Rules and Regulations, WAC 222. Section 38 of WAC 222 pertains to forest chemicals including pesticides and fertilizers. These regulations are written to protect timber resources, fish, and wildlife from the misuse or misapplication of forest chemicals. The elements of the program that apply to pesticides involve issuing permits for pesticide applications in forests and monitoring permit restrictions.

Agency Response Time Mandates

Washington State Department of Agriculture

WAC 16-228-233 directs the Washington State Department of Agriculture to respond to complaints involving humans or animals immediately. All other complaint investigations must be initiated within 48 hours.

Department of Health

WAC 246-100-217 directs the Department of Health (DOH) to respond to incidents within time periods based on severity. In the event of a pesticide-related hospital admission, death, or a threat to public health, DOH must respond within 24 hours. For all other cases, DOH must respond within 48 hours after notification.

Labor and Industries

The Department of Labor and Industries (L&I) response times are mandated in the Federal Occupational Safety and Health Act operations manual. Serious complaints require response within 30 days; all others within 120 days. The goal of the L&I Consultation and Compliance Services Division is to respond to serious complaints within 15 days; all others within 30 days. Response is defined as a site visit, not a telephone call.

April 6, 1998

Appendix B

PIRT Agendas

PIRT MEETING

PESTICIDE INCIDENT REPORTING AND TRACKING REVIEW PANEL

STATE PUBLIC HEALTH LAB
1610 NE 150TH STREET
SEATTLE, WASHINGTON

Thursday January 18, 2001
Room S-4

1:30 pm to 3:30 pm

AGENDA

1:30	Welcome Agenda Overview Review November Meeting Summary	Maryanne Guichard
1:45	**PIRT Panel Activities** Report on action items • 2000 PIRT Legislative Summary	Lynden Baum
2:00	Update on Worker Protection Standards (WPS) Assessment	Alice Larson
2:15	2001 Annual PIRT Report and Five Year Data Analysis	Jane Lee
2:45	National Evaluation of WPS Training	Alice Larson
3:10	Other Business • Next meeting agenda items	
3:20	Public Comment:	
3:30	Adjourn	

PIRT MEETING

PESTICIDE INCIDENT REPORTING AND TRACKING REVIEW PANEL

STATE PUBLIC HEALTH LAB
1610 NE 150TH STREET
SEATTLE, WASHINGTON

Thursday, April 19, 2001
Room S 4

9:30 am to 11:30 pm

AGENDA

9:30	Welcome Agenda Overview Review February Meeting Summary	Maryanne Guichard
9:40	**PIRT Panel Activities** Report on action items • Legislative Update	
9:50	Update from the "Pacific Northwest Agricultural Safety and Health Center", UW	Matt Keifer
	Update from the "Center for Child Environmental Health Risks Research", UW	Rich Fenske
10:50	Other Business • Recent Oregon Court Decision	
11:10	Public Comment:	
11:30	Adjourn	

PIRT MEETING

PESTICIDE INCIDENT REPORTING AND TRACKING REVIEW PANEL

STATE PUBLIC HEALTH LAB
1610 NE 150TH STREET
SEATTLE, WASHINGTON

Thursday May 17, 2001
Room S-4

1:30 pm to 3:00 pm

AGENDA

1:30	Welcome Agenda Overview Review February Meeting Summary	Jane Lee
1:40	**PIRT Panel Activities** Report on action items • Legislative Update Substitute Senate Bill 5533 "Schools Posting Bill"	Ann Wick
2:00	Recent 9th Circuit Court decision regarding aquatic pesticide use	Ann Wick
2:15	WSDA Program Proposal "Aquatic pesticides and salmon"	Ann Wick
2:30	Other Business	
2:45	Public Comment	
3:00	Adjourn	

PIRT MEETING

PESTICIDE INCIDENT REPORTING AND TRACKING REVIEW PANEL

STATE PUBLIC HEALTH LAB
1610 NE 150TH STREET
SEATTLE, WASHINGTON

Thursday June 21, 2001
Room Q-20

10:00 am to 12:00 pm (Please note new time)

AGENDA

10:00	Welcome Agenda Overview Review May Meeting Summary	Maryanne Guichard
10:15	**PIRT Panel Activities** Report on action items	
10:30	Update from the "Pacific Northwest Agricultural Safety and Health Center", UW	Matt Keifer
	Update from the "Center for Child Environmental Health Risks Research", UW	Rich Fenske
11:30	Other Business ♦ Next meeting Wednesday July 18, 2001 in Yakima with the Pesticide Advisory Board	
11:45	Public Comment:	
12:00	Adjourn	

WASHINGTON STATE DEPARTMENT OF AGRICULTURE

Pesticide Advisory Board Meeting
July 18, 2001, 10:00 a.m.
Yakima, WA

AGENDA

• Opening Comments	Chairman Goodwin
• PIRT Panel Update	Maryanne Guichard
• NPDES Permits	Kathleen Emmett
• Pesticide Advisory Board Charter	Chairman Goodwin
• Two-Year Pesticide Registration Ad Hoc Committee	Ted Maxwell
• Direct Supervision Proposal/Status	Cliff Weed
• Monitoring Cholinesterase Baseline for Farm Workers	Dan Ford
• Program Updates	
o Compliance	Cliff Weed
o Program Development	Ann Wick
o Registration	Ted Maxwell
• Other Business/Adjourn	Chairman Goodwin

PIRT MEETING

PESTICIDE INCIDENT REPORTING AND TRACKING REVIEW PANEL

STATE PUBLIC HEALTH LAB
1610 NE 150TH STREET
SEATTLE, WASHINGTON

Thursday September 20, 2001
Room S-4

10:00 am to 12:00 pm

AGENDA

10:00	Welcome Agenda Overview Review June Meeting Summary	Maryanne Guichard
10:15	**PIRT Panel Activities** Report on action items Renew membership 5 Year Data Review WSU Articles 2000 Annual Report 1999 Report Recommendations	Jane Lee
10:30	• Pesticide Advisory Board Meetings Update • Migrant Farmworker Forum August 8, 2001 Yakima • WSDA Participation in an EPA Pilot Program to Track Cases • DOH-NIOSH Project • DOH - New Data System • West Nile Virus-Update • Citrus Longhorn Beetle - Update • Gypsy Moth - Update • Assessment of WPS	Ann Wick Lynden Baum Alice Larson
11:15	Agency Updates	
11:30	Other Business	
11:45	Public Comment	
12:00	Adjourn	

PIRT MEETING

PESTICIDE INCIDENT REPORTING AND TRACKING REVIEW PANEL

STATE PUBLIC HEALTH LAB
1610 NE 150TH STREET
SEATTLE, WASHINGTON

Thursday October 18, 2001
Room S-4

10:00 am to 12:00 pm

AGENDA

10:00	Welcome Agenda Overview Review September Meeting Summary	Maryanne Guichard
10:15	Agenda items held over from the September 20, 2001 PIRT meeting • WSDA Participation in an EPA Pilot Program to Track Cases • DOH-NIOSH Project/DOH - New Data System • Assessment of WPS	Ann Wick Lynden Baum Alice Larson
11:15	**PIRT Panel Activities** Report on action items Draft 2000 Annual Report	
11:30	Agency updates	
11:40	Other Business	
11:45	Public Comment:	
12:00	Adjourn	

PIRT MEETING

PESTICIDE INCIDENT REPORTING AND TRACKING REVIEW PANEL

STATE PUBLIC HEALTH LAB
1610 NE 150TH STREET
SEATTLE, WASHINGTON

Thursday December 20, 2001
Room S-4

10:00 am to 12:00 pm

AGENDA

10:00	Welcome Agenda Overview Review October and November Meeting Summaries	Maryanne Guichard
10:15	**PIRT Panel Activities** Draft 2000-2001 Annual Report	
11:00	Update on the EPA Assessment of the Worker Protection Standards	Alice Larson
11:35	Agency updates	
11:45	Other Business	
11:50	Public Comment:	
12:00	Adjourn	

Appendix C

- **DOH Relationship Classifications (Prior to 2000)**
- **National Public Health Surveillance System Relationship Classifications**
- **DOH Severity Index**
- **NIOSH Severity Classifications**

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
OFFICE OF ENVIRONMENTAL HEALTH AND SAFETY
7171 Cleanwater Lane, Building 4 • PO Box 47825 • Olympia, Washington 98504-7825
TDD Relay Service: 1-800-833-6388

DOH RELATIONSHIP CLASSIFICATIONS (PRIOR TO 2000)

DEFINITE: High degree of correlation between pattern of exposure and resulting symptomology. Requires in most cases both medical evidence (Cholinesterase, serum or urinary metabolites, allergy tests, etc.) and physical evidence (foliar samples, work history, spill noticeable on clothing, etc.) to support the conclusions.

PROBABLE: Relatively high degree of correlation exists between the pattern of exposure and the illness/injury experienced. Medical and/or physical evidence unavailable or inconclusive.

POSSIBLE: Some degree of correlation evident. Work history and/or application history ambiguous.

UNLIKELY: A correlation cannot be ruled out absolutely. Work history and/or application history ambiguous.

UNRELATED: Definite evidence of cause other than pesticide exposure.

ASYMPTOMATIC: Exposure occurred, but did not result in illness/injury.

INDIRECT: Pesticide exposure is not responsible, but pesticide regulation contributed in some way, (e.g., heat stress while wearing chemical resistant clothing).

UNKNOWN: There is insufficient information available to be able to classify in one of the above categories.

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NATIONAL PUBLIC HEALTH SURVEILLANCE SYSTEM RELATIONSHIP CLASSIFICATIONS

DEFINITE CASE: 1. Laboratory clinical or environmental evidence corroborates exposure, 2. Two or more new post-exposure abnormal signs and/or test/laboratory findings are reported by a licensed health care provider, and 3. The finding documented under health effects are characteristic for the pesticide and the temporal relationship between the exposure and health effects is plausible and/or the findings are consistent with an exposure-health effect relationship based upon the known toxicology of the putative agent.

PROBABLE CASE: 1. Laboratory clinical or environmental evidence corroborates exposure, 2. Two or more post-exposure abnormal symptoms reported but do not meet the threshold of a definite, and 3. The finding documented under health effects are characteristic for the pesticide and the temporal relationship between the exposure and health effects is plausible and/or the findings are consistent with an exposure-health effect relationship based upon the known toxicology of the putative agent.

OR

1. Evidence of exposure based solely upon written or verbal report by case, witness, application, observation of residue and/or contamination by other than a trained profession or other evidence suggesting that an exposure occurred, 2. Two or more new post-exposure abnormal signs and/or test/laboratory findings are reported by a licensed health care provider, and 3. The finding documented under health effects are characteristic for the pesticide and the temporal relationship between the exposure and health effects is plausible and/or the findings are consistent with an exposure-health effect relationship based upon the known toxicology of the putative agent.

POSSIBLE CASE: 1. Evidence of exposure based solely upon written or verbal report by case, witness, application, observation of residue and/or contamination by other than a trained profession or other evidence suggesting that an exposure occurred, 2. Two or more post-exposure abnormal symptoms reported but do not meet the threshold of a definite, and 3. The finding documented under health effects are characteristic for the pesticide and the temporal relationship between the exposure and health effects is plausible and/or the findings are consistent with an exposure-health effect.

SUSPICIOUS CASE: 1. Laboratory clinical or environmental evidence corroborates exposure, or evidence of exposure based solely upon written or verbal report by case, witness, application, observation of residue and/or contamination by other than a trained profession or other evidence suggesting that an exposure occurred, 2. Two or more new post-exposure abnormal signs and/or test/laboratory findings are reported by a licensed health care provider or two or more post-exposure abnormal symptoms reported but do not meet the threshold of a DEFINITE, and 3. Insufficient toxicological information is available to determine causal the relationship between the exposure and health effects.

UNLIKELY CASE: 1. Laboratory clinical or environmental evidence corroborates exposure, or evidence of exposure based solely upon written or verbal report by case, witness, application, observation of residue and/or contamination by other than a trained profession or other evidence suggesting that an exposure occurred, 2. Two or more new post-exposure abnormal signs and/or test/laboratory findings are reported by a licensed health care provider or two or more post-exposure abnormal symptoms reported but do not meet the threshold of a DEFINITE, and 3. Evidence of exposure-health effect relationship is not present due to no observed health or effect, a temporal relationship does not exist, or the constellation of health effects are not consistent based upon the known toxicology of the putative agent.

INSUFFICIENT INFORMATION: Insufficient data in the documentation of the pesticide exposure or insufficient data in the documentation of adverse health effects.

NOT A CASE: Strong evidence that no pesticide exposure occurred or insufficient toxicological information is available to determine causal relationship between exposure and health effects.

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DOH SEVERITY INDEX FOR PESTICIDE-RELATED CASES

01 No symptoms developed or if they did, a cause other than pesticides was identified.

02 **(mild)** Patient experienced mild, temporary symptoms. If medical care was sought, treatment was limited to decontamination and minor pain relief.

Patient experienced temporary or mild topical irritation.

03 **(moderate)** Patient suffered moderate systemic symptoms. Patient may have been seen in an Emergency Room, admitted for observation, or not admitted.

Patient suffered moderately painful, itchy, or otherwise irritating topical symptoms.

04 **(severe)** Patient suffered systemic symptoms and received aggressive treatment procedures or hospitalization. All symptoms resolved.

Patient suffered severe topical (eye and/or skin) burn, ulceration, or irritation that resulted in medical treatment.

05 **(severe)** Patient suffered systemic symptoms and received aggressive treatment procedures or hospitalization for 24 hours or more. At the time case was closed, symptoms had not resolved completely.

Patient suffered severe topical (eye and/or skin) burn, ulceration, or irritation that resulted in medical treatment. Permanent damage resulted.

06 Death occurred.

Revised April 6, 1998

Contact: Lynden Baum (360) 236-3360

TABLE: Signs and symptoms by severity category *(Modeled after Persson et. al.,1998 and includes SPIDER database elements)*

ORGAN SYSTEM	SEVERITY CATEGORY AND CODE			
	FATAL	HIGH	MODERATE	LOW
	1	2	3	4
	Death	**Severe or Life-threatening Signs**	**Pronounced or Prolonged Signs or Symptoms**	**Mild, transient, and spontaneously resolving symptoms**
Gastrointestinal System		• Massive hemorrhage/perforation of gut	• Diarrhea (G14, **sign only**) • Melena (GI7) • Vomiting (GI6, **sign only**)	• Abdominal pain, cramping (GI1) • Anorexia (GI2) • Constipation (GI3) • Diarrhea (GI4, **symptom**) • Nausea (GI5) • Vomiting (GI6, **symptom**)
Respiratory System		• Cyanosis (RESP 2) + Respiratory depression (RESP 7) • Pulmonary edema (RESP6) • Respiratory arrest	• Abnormal pulmonary x-ray • Pleuritic chest pain/pain on deep breathing (RESP8) • Respiratory depression (RESP7) • Wheezing (RESP9) • Dyspnea, shortness of breath (RESP4, **sign only**)	• Cough (RESP1) • Upper respiratory pain, irritation (RESP3) • Dyspnea, shortness of breath (RESP4, **symptom**)
Nervous System		• Coma (NS3) • Paralysis, generalized (NS10) • Seizure (NS5, **sign only**)	• Confusion (NS4) • Hallucinations (NS99 Other) • Miosis with blurred vision (NS14) • Seizure (NS5, **symptom**) • Ataxia (NS1, **sign only**) • Slurred speech (NS12) • Syncope (fainting) (NS17) • Peripheral neuropathy (NS11, **sign only**)	• Hyperactivity (NS2) • Headache (NS7) • Profuse sweating (NS13) • Dizziness (NS15) • Ataxia (NS1, **symptom**) • Peripheral neuropathy (NS11, **symptom**)

ORGAN SYSTEM	SEVERITY CATEGORY AND CODE			
	FATAL	HIGH	MODERATE	LOW
	1	2	3	4
	Death	**Severe or Life-threatening Signs**	**Pronounced or Prolonged Signs or Symptoms**	**Mild, transient, and spontaneously resolving symptoms**
Cardiovascular System		• Bradycardia/ heart rate <40 for adults, < 60 infants and children, <80 neonates (CV1) • Tachycardia/ heart rate>180 for adults, >190 infants/children, >200 in neonates (CV4) • Cardiac arrest (CV2)	• Bradycardia / heart rate 40-50 in adults, 60-80 in infants/children, 80-90 in neonates (CV1) • Tachycardia / heart rate=140-180 in adults, 160-190 infants/children, 160-200 in neonates (CV4) • Chest Pain (CV7) + Hyperventilation, Tachypnea (RESP5) • Conduction disturbance (CV3) • Hypertension (CV6) • Hypotension (CV5)	
Metabolism		• Acid Base disturbance (pH< 7.15 or >7.7)	• *Acid Base disturbance (pH = 7.15-7.24 or 7.60-7.69)* • Elevated anion gap (MISC4)	• Fever (MISC1)
Renal System		• Anuria (GU2) • Renal failure	• Hematuria (GU3) • Oliguria (GU2) • Proteinuria (GU4)	• Polyuria (GU1)
Muscular system		• Muscle rigidity (NS9) + elevated urinary myoglobin + elevated creatinine	• *Fasciculations (NS6)* • *Muscle rigidity (NS9)* • *Muscle weakness (NS8, **sign only**)*	• Muscle weakness (NS8, **symptom**) • Muscle pain (NS16)
Local effects on skin		• Burns, second degree (involving >50% of body surface area) • Burns, third degree (involving >2% of body surface area)	• *Bullae (DERM1)* • Burns, second degree (involving <50% of body surface area) • Burns, third degree (involving <2% of body surface area)	• Skin Edema/Swelling, Erythema, Rash, Irritation/Pain, Pruritis (DERM3 - 7) • Hives/Urticaria
Local effects on eye		• Corneal ulcer/perforation	• Corneal abrasion (EYE3) • *Ocular burn (EYE2)*	• Lacrimation (EYE4) • Mydriasis (EYE6) • Miosis (EYE1) • Ocular pain/irritation/inflammation (diagnosis of conjunctivitis) (EYE5)
Other effects				• Fatigue (MISC5) • Malaise (MISC6)

Appendix D

Agency Data Summaries:

- **Washington State Department of Agriculture**
- **Department of Health**
- **Department of Labor and Industries**

Washington State Department of Agriculture

Department of Health

2000 Pesticide Incidents
Annual Summary Report of Definite, Probable, and Possible

Case	Exposure Date	Incident Description
000001	01/05/2000	A 51 y/o male resident was sweeping the floor at the shelter when another person sprayed an insecticide within 3 feet of his face. The patient immediately became ill and received medical treatment. Insecticide: Pyrethrins; Diazinon 1 Definite Severity: Low/Mild
000004	01/15/2000	A 30 y/o female smoker sprinkled flea powder over her carpet. She experienced wheezing, tight lungs & productive cough. She was seen in ER & given albuterol treatment. Insecticide: Boric acid 1 Possible Severity: Low/Mild
000005	01/14/2000	Three female office workers experienced symptoms after a container of pesticide leaked in an office cube. The smell was reported as contributing to the symptoms. None sought medical treatment. Insecticide: Diazinon 2 Possible Severity: Low/Mild 1 Suspicious
000007	01/06/2000	A 25 y/o male applicator applied premixed chlorpyrifos product with a backpack sprayer to evergreen cuttings in a nursery. He reported wearing all required PPE. No known spills or contact w/ chemical. He developed headache 3 hours later. Insecticide: Chlorpyrifos 1 Possible Severity: Low/Mild
000008	01/27/2000	Four adults experienced mild symptoms after removing furniture and personal items from an apartment 24 hours after it had been fogged with pyrethrins. One sought health care. Insecticide: Pyrethrins 2 Possible Severity: Low/Mild 2 Insufficient Information
000012	02/11/2000	A 72 y/o female was working in her garden and received an eye exposure to dormant oil. She immediately washed her eye with water. Due to irritation she called the Poison Center and afterwards went to the ER for treatment and an exam. Fungicide: Calcium polysulfide 1 Definite Severity: Low/Mild
000014	02/24/2000	A father was applying head lice shampoo to the head of his 23 month old daughter and shampoo washed into her eyes. She was seen by an ophthalmologist for chemical keratitis. Insecticide: Pyrethrins 1 Definite Severity: Low/Mild
000015	02/28/2000	A 42 y/o female reports to the ER for facial irritation after spraying her hair with an aerosol wasp spray for insects she believes to be in her hair. Insecticide: Esfenvalerate; Tetramethrin; Fenvalerate 1 Probable Severity: Low/Mild
000025	02/10/2000	A 26 y/o female applied lice spray to carpet in her home. She did not leave as suggested on the product label and did not ventilate the space. She sought medical treatment at the ER. Insecticide: Phenothrin 1 Possible Severity: Low/Mild

Case	Exposure Date	Incident Description
000026	03/15/2000	Three construction workers were drifted upon from an application to an adjacent orchard. One worker felt the mist. One workers shirt tested positive for residues of product sprayed. Two workers and spouse of one of the workers who visited the site complained of mild symptoms. Insecitcide: Calcium polysulfide; Petroleum distillate, oils, Esfenvalerate 1 Possible Severity: Low/Mild 1 Unlikely 1 Insufficient Information 1 Asymptomatic
000030	03/28/2000	A 37 y/o female self-applied product to her scalp and exposed both her eyes. She waited 10 minutes before rinsing off in the shower. She was seen on an emergency basis and referred to an ophthalmologist. Insecticide: Permethrin 1 Probable Severity: Low/Mild
000031	03/30/2000	A 43 y/o female became ill after her 16 y/o son poured pesticide product in hole in floor in her bedroom to treat for ants. Insecticide: Acephate 1 Possible Severity: Low/Mild
000032	03/30/2000	Patient was exposed while applying pesticide at home with a leaking container causing exposure to the hands. Insecticide: Chlorpyrifos 1 Definite Severity: Low/Mild
000033	03/30/2000	Two adult males were drifted upon by application to a neighboring orchard. One man was repairing a roof. The other was outside his shop. Both developed mild symptoms. No medical treatment sought. WSDA tests positive for pesticide residuals on clothing. Insecticide: Esfenvalerate, Endosulfan 1 Probable Severity: Low/Mild 1 Insufficient Information
000036	03/31/2000	A 43 y/o female had symptoms after her car was drifted on by a pesticide. The owner of the property where she was visiting and purchasing a dog smelled the pesticide but was not symptomatic. Neither sought medical care. Their dogs became ill. Insecticide/fungicide: Sulfur Insecticide: Endosulfan; Chlorpyrifos 1 Probable Severity: Low/Mild 1 Asymptomatic
000037	04/02/2000	A 40 y/o male splashed a moss control product in eye while in his front yard. There was no information on what he was doing at the time. He flushed his eye and sought treatment at the ER. Herbicide/algaecide: Ferric sulfate 1 Possible Severity: Low/Mild
000039	03/23/2000	A 26 y/o male pesticide mixer/applicator sought medical care for symptoms experienced after loading pesticides in a sprayer. He wore PPE. Fungicide: Fenarimol Insecticide: Chlorpyrifos 1 Possible Severity: Low/Mild
000040	04/11/2000	A 3 y/o was in the garage where a container of livestock insecticide was on the floor. Child was found with unknown materials on his face. He was immediately showered and taken to the ER with complaint of burning eyes and a “strong chemical odor” on his head. Insecticide: Coumaphos 1 Possible Severity Low/Mild

Case	Exposure Date	Incident Description
000041	04/11/2000	Adult male fireman fighting a fire in a storage trailer containing pesticides developed nausea, headache and other symptoms two hours after incident despite PPE including SCBA. Insecticide: Pyrethrins; Bendiocarb 1 Possible Severity: Low/Mild
000042	04/10/2000	A 41 y/o male spray applicator and farm owner became ill after spraying for 2 days. He was wearing a dust respirator for PPE. He felt the pesticide mist on his face. He called the Poison Center on the second day. Insecticide: Chlorpyrifos 1 Possible Severity: Low/Mild
000044	03/30/2000	A 40 y/o male applicator became ill after a fumigant canister came loose and sprayed him. His overalls were soaked. He went home to shower. He sought medical treatment 1 day later. Fumigant: Methyl bromide 1 Probable Severity: Low/Mild
000045	03/29/2000	A 33 y/o male forklift driver became exposed to insecticide residues that had been sprayed in the building, including his work site, small office, doors and boxes. After work he developed a pruritic rash all over body; it resolved 4 days after med treatment. Insecticide: Cyfluthrin 1 Probable Severity: Low/Mild
000046	03/30/2000	A 38 y/o male developed vomiting, eye and skin irritation, after splashing lime sulfur to his face. He washed immediately & sought med treatment next day. Eye irritation resolved slowly. Insecticide and fungicide: Calcium polysulfide 1 Probable Severity: Low/Mild
000048	04/19/2000	A 25 y/o male applicator was applying a termiticide when the hose broke and soaked him. He removed his clothes and showered within 20 minutes. Ten hours later he went to ER for treatment of symptoms. Insecticide: Permethrin 1 Probable Severity: Low/Mild
000050	04/19/2000	A 57 y/o female reported a drift exposure from a ground application on neighbor's peach trees. She was 100 feet away from applicator. Medical care sought for shortness of breath, headache and itching. Fungicide: Myclobutanil Insecticide and fungicide: Sulfur, Calcium polysulfide 1 Probable Severity: Low/Mild
000052	04/12/2000	A 37 y/o male farm mechanic presented to the ER with complaint of both topical, respiratory and other systemic symptoms after playing soccer in an apple orchard on his break. The orchard had been sprayed the previous day. Fungicide: Myclobutanil Insecticide and fungicide: Calcium polysulfide 1 Probable Severity: Low/Mild
000055	04/13/2000	A 37 y/o male pruning apple trees developed symptoms after being drifted upon from orchard being sprayed about 60 feet away. He felt and smelled the spray. He sought medical treatment the same day. Insecticide and fungicide: Calcium polysulfide 1 Probable Severity: Low/Mild

Case	Exposure Date	Incident Description
000057	04/05/2000	A 40 y/o male developed shortness of breath and wheezing after smelling pesticide odor. A insecticide had been applied in a small bathroom 5 min. before. He sought medical treatment the same day. Insecticide: Resmethrin 1 Possible Severity: Low/Mild
000059	4/22/2000	A 41 y/o female sprayed an insecticidal soap product and accidentally sprayed her eyes. Insecticide: Potassium salts of fatty acids 1 Possible Severity: Low/Mild
000061	04/20/2000	A 48 y/o female developed chest tightness, shortness of breath, HA, nausea, bad taste in mouth and diarrhea after she inhaled and felt pesticide spray from county roadside week application. HCP seen two weeks post exposure. Herbicide: Diuron, 2,4-D 1 Possible Severity: Low/Mild
000062	04/27/2000	A 29 y/o male pesticide applicator was spraying weeds in an apple orchard from a tractor. The brakes failed, he hit a tree and was splashed in face with herbicide. He sought medical care the same day for mild ocular symptoms. Herbicide: Glyphosate 1 Definite Severity: Low/Mild
000063	04/07/2000	A 26 y/o orchard prunner developed symptoms after he was drifted upon from a neighboring spray application. He sought medical care the same day for systemic symptoms. Insecticide: Chlorpyrifos 1 Probable Severity: Low/Mild
000065	05/01/2000	A 61 y/o female and her 37 y/o son reported a drift exposure from ground application on adjacent apple orchard. Both reported mild symptoms. Also had a foal born dead. Lab reported Carbaryl present on property; urine samples taken from mare were negative for pesticides metabolites. Insecticide: Carbaryl Other: NAA 1 Probable Severity: Low/Mild 1 Insufficient Information
000067	04/21/2000	A 29 y/o female developed symptoms after entering a field treated 4 days previously. She sought medical attention two days after exposure. Experienced a skin rash that lasted about a week. Insecticide and fungicide: Calcium polysulfide Plant growth regulator: Gibberellic Acid 1 Probable Severity: Low/Mild
000070	05/03/2000	A pregnant 19 y/o applied "roach dust" to floor of her residence. The next morning she swept the floor and started to have symptoms. Dust was evident in the air when she swept the floor. Insecticide: Boric acid 1 Possible Severity: Low/Mild
000071	05/07/2000	A 30 y/o adult female developed ocular symptoms after applying pesticides in her yard. Sought medical care at the local emergency department. Insecticide: Diazinon 1 Definite Severity: Low/Mild

Case	Exposure Date	Incident Description
000076	04/25/2000	A 29 y/o male developed ocular symptoms after a drop of herbicide hit his eye while spraying. Herbicide: Glyphosate 1 Probable Severity: Low/Mild
000079	05/15/2000	A 24 y/o applicator was sprayed when the hose came off while he was filling his spray tank. The spray mix went onto his back and neck and inside his PPE. He developed symptoms and was taken to ER. Fungicide: Myclobutanil Insecticide: Imidacloprid, Azinphos-Methyl, Phosmet 1 Probable Severity: Low/Mild
000081	05/16/2000	A 47 y/o female applied two herbicides to her lawn. While applying she came in contact with the spray and immediately washed herself. A few hours later, she developed headache and nausea and went to see a health care provider. Herbicide: Glyphosate: 2,4-D 1 Possible **Severity**: Low/Mild
000083	05/20/2000	A 44 y/o male homeowner splashed a moss control product in his face while opening the product container to use on his lawn. He rinsed his eyes and sought medical care for ocular symptoms the same day. Herbicide/algaecide: Ferric sulfate 1 Probable Severity: Low/Mild
000084	05/19/2000	A 26 y/o female got a drop of insecticide into her eye when she opened the product. As the eye was irritated, she called WPC and then went to the ER for treatment. Insecticide: Fipronil 1 Definite Severity: Low/Mild
000085	05/22/2000	A 27 y/o male presents at ER complaining of symptoms from applying pesticides to an apple orchard. Diagnosed as mild organophosphate exposure. Insecticide and fungicide: Sulfur Insecticide: Imidacloprid, Azinphos-Methyl 1 Possible Severity: Low/Mild
000086	05/15/2000	A 46 y/o male homeowner splashed a drop of a moss control product into his eye. He experienced irritation, flushed his eye and went to the ER. Herbicide/algaecide: Zinc 1 Definite Severity: Low/Mild
000087	05/01/2000	An adult male was applying herbicide to knapweed when his spray nozzle became plugged When he attempted to clear the nozzle, the gun discharged and he received several drops of the chemical in his mouth. He was wearing all required PPE. He washed and rinsed his mouth for several minutes, then taken to the ER for decontamination and treatment of mild symptoms. Herbicide: Clopyralid 1 Definite Severity: Low/Mild
000093	05/24/2000	A 56 y/o male applied herbicide spray outside his home. He smelled odor for a brief time and experienced symptoms, of which some are possibly related. He went to ER the following day. Herbicide: 2,4-DP 1 Possible Severity: Low/Mild
000095	05/25/2000	Dairy worker was applying herbicide around barn when he accidentally contaminated his eyes. Sought medical care for mild ocular symptoms. Herbicide: Glyphosate 1 Probable Severity: Low/Mild

Case	Exposure Date	Incident Description
000096	05/29/2000	A 28 y/o male was spraying his lawn with a hand sprayer when the sprayer burst and sprayed his eyes and face. He showered & went to ER. Exposure was not determined to be a toxic dose. Insecticide: Diazinon 1 Possible Severity: Low/Mild
000097	05/25/2000	Pesticide applicator received eye exposure while spraying pesticide in orchard. He was wearing PPE. Developed mild ocular and respiratory symptoms when the spray drifted back and onto him. He sought medical care the next day. Fungicide: Mancozeb, Triflumizole 1 Possible Severity: Low/Mild
000101	05/13/2000	A 42 y/o male pesticide applicator developed skin rash, burning eyes after spraying tank mix of pesticides. Was wearing required PPE, but still getting exposed where face, neck not covered. Sought medical treatment; dermatitis resolving after 5 days. Fungicide: Triadimefon, Thiram Insecticide: Carbaryl Plant growth regulators: NAA 1 Probable Severity: Low/Mild
000102	03/25/2000	A 33 y/o male developed rash after spraying pesticides in a pear orchard. There is some question whether he always wears his PPE, but he claims that pesticides got inside his protective suit. After developing the rash he did not seek medical treatment until 6 weeks later. Insecticide/Miticide: Oil 1 Possible Severity: Low/Mild
000103	05/29/2000	A 24 y/o male dropped a cement block on an aerosol can of herbicide spray and product sprayed into the patient's face. He began having mild symptoms, flushed face and went to ER. Herbicide: 2,4-D 1 Definite Severity: Low/Mild
000104	06/01/2000	A 2 y/o girl ingested insect repellent from a 1.5 oz. container. The child vomited three times and the grandmother called 911, WPC, and then transported the child to the ER. She was examined, treated and discharged home. Insect repellant: DEET 1 Probable Severity: Low/Mild
000108	05/24/2000	An application of malathion was made to the exterior of a sixty y/o female’s home in an effort to control ants, spiders and wasps. The windows were open and she reported a reaction to the odor. She did not seek medical attention. Insecticide: Malathion 1 Possible Severity: Low/Mild
000109	05/21/2000	A retired couple living across the street from a commercial application, reported the spray of the application drifting across the street and onto themselves and their property. They also reported symptoms believed to be related to the spray contact. Insecticide: Permethrin 2 Possible Severity: Low/Mild
000112	05/23/2000	A 25 y/o male applicator received an occupational exposure while spraying herbicides to an onion field. He wore PPE, but still developed symptoms in his right eye for which he sought treatment. Herbicide: Oxyfluorfen 1 Possible Severity: Low/Mild

Case	Exposure Date	Incident Description
000114	05/19/2000	A 23 y/o male orchard applicator was exposed to herbicide while applying. He was wearing PPE but not eye protection. He sought medical care the same day for ocular symptoms. Herbicide: Glyphosate 1 Definite Severity: Low/Mild
000119	06/05/2000	A 60 y/o male had taken lid off container. It slipped out of his hand and insecticide splashed into his eyes. He experienced burning and itching. He immediately flushed his eyes with water and went to local ER. Insecticide: Cyfluthrin 1 Definite Severity: Low/Mild
000123	05/23/2000	Applicator sought medical care for symptoms from exposure while spraying hops. The wind blew the spray back in his face. He was wearing a dust mask rather than appropriate PPE. Fungicide: Myclobutanil, Mefenoxam 1 Probable Severity: Low/Mild
000125	06/08/2000	A 26 y/o male complained of mild dermal symptoms following application of herbicides and was seen in clinic. Herbicide: Glyphosate, 2,4-D 1 Probable Severity: Low/Mild
000127	06/13/2000	A 35 yr old female & 33 yr old male farmworkers thinning apples became ill shortly after an aerial application of malathion to an adjacent cherry orchard. Both sought medical treatment the same day. Insecticide: Malathion 1 Definite Severity: Low/Mild 1 Insufficient Information
000133	05/22/2000	A 33 y/o male farm worker developed symptoms after placing aluminum phosphide tablets in the ground. He said the ground was wet; he could smell the fumigant. He wore a respirator & rubber gloves but still developed upper respiratory and other systemic systems. Fumigant: Aluminum phosphide 1 Possible Severity: Low/Mild
000136	06/05/2000	A 21 y/o male motorist developed symptoms after he was allegedly drifted with herbicides. He felt the spray on his face and tasted it. He did not seek medical care. WSDA tests were negative for residues inside/outside of his vehicle. Herbicide:2,4-D; Dicamba 1 Possible Severity: Low/Mild
000137	04/13/2000	Nursery worker developed neurological symptoms of moderate Severity after spraying for several years. Patient had not used proper personal protective equipment. L&I conducted an investigation. Fungicide: Iprodione Herbicide and Fungicide: Copper hydroxide Insecticide: Permethrin Plant growth regulators: Daminozide 1 Probable Severity: Low/Mild
000139	06/14/2000	A 20 y/o female sprayed an insecticide aerosol in her dorm room. The product was professional strength & used incorrectly. She became ill shortly after applying the product. She sought medical care. Symptoms resolved in 1 week. Insecticide: Chlorpyrifos 1 Possible Severity: Low/Mild

Case	Exposure Date	Incident Description
000140	06/17/2000	A mother reports that lice shampoo got in the eyes of 3 y/o twin girls while she was shampooing their hair in the tub. Both children seen by a health care provider for eye irritation although one child had more intense symptoms. Insecticide: Pyrethrins 1 Definite Severity: Low/Mild 1 Possible Severity: Low/Mild
000141	06/02/2000	A 36 y/o female was counting cherry trees when an airplane sprayed the onion field next to where she was working. She felt spray on her face and hands. She sought medical treatment 3 days later. WSDA tests were positive for residues in the area. Herbicide: Clethodim 1 Definite Severity: Low/Mild
000142	06/05/2000	A 30 y/o male accidentally sprayed himself in the eyes when he was attacked by bees. He immediately washed his face with water, but experienced irritation. He went to the ER for treatment. A foreign body was discovered that contributed to the pain. Insecticide: Resmethrin 1 Possible Severity: Low/Mild
000144	05/11/2000	A 32 y/o male developed a corneal abrasion and contact dermatitis after he was exposed to sulfur dust. He was wearing PPE, but the dust still got into his eyes. He rinsed his eyes for 15 minutes after exposure. However, he still developed eye irritation 2 hours later. He sought medical treatment 12 days later. Insecticide: Sulfur 1 probable Severity: Low/Mild
000148	06/07/2000	A 40 y/o male wastewater plant operator splashed face with water mixed with sodium hypochlorite. Disinfectant: sodium hypochlorite 1 Probable Severity: Low/Mild
000150	05/29/2000	A 29 y/o applicator was sprayed in the face when the wind came up as he was applying. He was treated for dermal symptoms. Insecticide: Bacillus thuringiensis subsp. Kurstaki 1 Probable Severity: Low/Mild
000152	06/21/2000	A 12 month old male child was brought to ER by his mom. Mom had sprayed ant and roach killer on the floor and child probably contacted with hands. Mother reported child had vomited and had some ocular involvement. Child released with a diagnosis of dermal exposure to insecticide. Insecticide: Pyrethrins; Propoxur; Cyfluthrin 1 Possible Severity: Low/Mild
000153	06/21/2000	A 36 y/o female complained of symptoms after inhaling pesticide mist from roomate's application to flowers in yard. Fungicide: Triforine; Dicofol Insecticide: Acephate 1 Probable Severity: Low/Mild
000154	06/21/2000	A 2 y/o girl was observed playing with diazinon crystals. The child didn't like the taste and gagged. Her mother rinsed out her mouth. Following paramedic referral, the mother called Poison Control and took the child to ER. Insecticide: Diazinon 1 Possible Severity: Low/Mild

Case	Exposure Date	Incident Description
000155	06/21/2000	A 46 y/o female was applying herbicide for weed control around her home. A breeze came up and blew spray into her face. She developed mild systemic symptoms and sought health care later in the evening at the ER. Herbicide: Glyphosate 1 Possible Severity: Low/MIld
000157	06/20/2000	A fourteen month female who had sat in an area of the garden that had been treated with a herbicide a couple of hours earlier developed a rash. She was taken to a health care provider for examination and treatment. Herbicide: Glyphosate 1 Probable Severity: Low/Mild
000158	06/19/2000	A 20 y/o male licensed pesticide applicator was exposed while spraying apples. He wore PPE except for goggles. He had intense eye irritation. The diagnosis was seasonal allergy exacerbated by sprays. Fungicide: Myclobutanil Insecticide: Azinphos-Methyl 1 Probable Severity: Low/Mild
000159	06/20/2000	A 29 y/o male tractor driver was exposed to an aerial drift from potato field application while raking hay. The next day he awoke with a sore throat and sought medical care. Fungicide: Mancozeb Insecticide: Pymetrozine; Esfenvalerate 1 Possible Severity: Low/Mild
000162	06/16/2000	A 71 y/o female developed symptoms after her car was drifted on by an aerial pesticide application. She did not seek medical attention. WSDA tests were positive for residues off target area. Insecticide: Phosmet; Dimethoate 1 Possible Severity: Low/Mild
000163	06/06/2000	A 40 y/o male developed symptoms after mixing and spraying a pesticide. He did not wear a respirator while mixing the pesticide and it may not have been working properly while he was doing the spray application. Insecticide: Azinphos-Methyl 1 Possible Severity: Low/Mild
000166	03/10/2000	A 37 y/o male became ill while working in an apple orchard that had been sprayed 9 days before. Fungicide: Copper hydroxide 1 Possible Severity: Low/Mild
000169	06/20/2000	A family of 5 were in their backyard when a helicopter sprayed the adjacent cherry orchard. They could see the drift over their yard and pool. Samples of the trees and pool water were positive for malathion. Insecticide: Malathion 5 Probable Severity: Low/Mild (5)
000171	06/03/2000	A 22 y/o male went into a hop field to clean filters on the irrigation system. According to spray records the field had been sprayed that same day. He did not wear gloves. Worker developed dry, itchy eyes that same day. Sought medical treatment one week later when symptoms did not resolve. Fungicide: Myclobutanil; Sulfur; Potassium Bicarbonate 1 Probable Severity: Low/Mild

Case	Exposure Date	Incident Description
000173	05/29/2000	Two adult female farm workers developed symptoms after they alleged they were drifted upon. The applicator was 12 meters away and both workers felt the spray and continued working. Both patients experienced symptoms but did not seek medical treatment until several weeks later when shortness of breath and coughing didn't dissipate. One worker has history of asthma. Fungicide: Myclobutanil Insecticide: Azinphos-Methyl; Imidacloprid 1 Possible Severity: Low/Mild 1 Insufficient Information
000174	06/05/2000	A 37 y/o female developed dermal symptoms after pruning limbs in an apple orchard. Sought medical attention the following day for urticaria. Fungicide: Calcium oxytetracycline 1 Probable Severity: Low/Mild
000178	07/07/2000	A 31 y/o male developed eye irritation after he accidentally rubbed mosquito repellant in his eye. The repellant had recently been applied to his hand. He sought medical treatment the next day. Insect repellant: DEET 1 Definite Severity: Low/Mild
000182	06/03/2000	A 30 y/o male developed mild eye symptoms after being sprayed with chemical when hose broke. He sought immediate medical treatment for eye irritation. Herbicide: Alachlor 1 Probable Severity: Low/Mild
000184	06/15/2000	A 31 y/o female developed topical symptoms after picking cherries. Pesticide records showed that pesticides were applied the day she started picking cherries as well as 2 days before. Fungicide: Propiconazole Insecticide: Malathion 1 Definite Severity: Low/Mild
000185	06/28/2000	A 25 y/o male developed eye irritation one day after he was splashed with herbicide and sought medical care. He was wearing safety goggles and washed his eyes following the accident. Herbicide: Paraquat dichloride 1 Possible Severity: Low/Mild
000186	05/05/2000	A 33 y/o male developed rash after spilling fumigant on his shirt and shoes. He was not wearing PPE. He developed symptoms 2-3 days after exposure. Fumigant: Metam-sodium 1 Probable Severity: Low/Mild
000187	06/03/2000	A 45 y/o male developed symptoms 11 hours after he accidentally sprayed pesticide in his left eye. He was not wearing goggles. He sought medical treatment 11 days later when symptoms did not dissipate. Fungicide: Myclobutanil Insecticide: Carbaryl 1 Definite Severity: Low/Mild
000194	06/19/2000	A 53 y/o male wearing T-shirt, shorts and no shoes applied 12 - 32 oz bottles of insecticide via hose-end sprayer to his lawn to kill mosquitoes. He became ill with systemic and topical symptoms and sought medical treatment the same day. Insecticide: Permethrin 1 Possible Severity: Low/Mild

Case	Exposure Date	Incident Description
000196	07/09/2000	A 35 y/o male complained of gastrointestinal symptoms after using lawn chemicals on his yard. His symptoms continued and he went to a walk-in clinic 2 days later. Insecticide: Diazinon 1 Possible Severity: Low/Mild
000197	07/14/2000	A 57 y/o female applied topical scabicide to an infected area. The treatment caused a worsening of a pre-existing skin irritation. Insecticide: Permethrin 1 Possible Severity: Low/Mild
000198	07/16/2000	A container of moss killer fell off a shelf at a retail establishment. An employee inhaled some of the dust. Fire department EMT personnel responded and treated the employee at the scene for mild upper respiratory symptoms. Herbicide: Ferric sulfate 1 Probable Severity: Low/Mild
000200	07/04/2000	A 34 y/o male became ill and sought treatment at ER after applying pesticide. Insecticide: Imidacloprid; Aminphos-methyl 1 Possible Severity: Low/Mild
000202	06/15/2000	A 46 y/o apple thinner developed allergy like symptoms while working. He believes he is allergic to spray residues. Fungicide: Myclobutanil Insecticide: Carbaryl 1 Possible Severity: Low/Mild
000207	07/24/2000	A 59 y/o male farmworker was exposed to pesticide drift from a neighboring application while he was tying pear limbs. He developed mild topical symptoms. Insecticide: Imidacloprid; Azinphos-Methyl 1 Probable Severity: Low/Mild
000208	07/12/2000	A 54 y/o female office worker experienced multiple symptoms 30 minutes after her employer applied an insecticide 3-4 feet away from her. She sought medical treatment the next day. Insecticide: Cyfluthrin 1 Probable Severity: Low/Mild
000210	07/14/2000	A 20 y/o male developed eye symptoms after he sprayed pears with a kaolin base spray. He also thinned pears that day. Insecticide: Kaolin 1 Definite Severity: Low/Mild
000211	07/10/2000	A 30 y/o developed burning sensation in his eyes after one drop of concentrated plant growth regulator splashed in his eye while mixing a solution. Plant growth regulator: Ethephon 1 Definite Severity: Low/Mild
000213	05/25/2000	A 23 y/o female field worker had allergic reaction after thinning apples. The reentry time on the product was 72 hours and it had been 6 days since the application. Insecticide: Azinphos-Methyl 1 Possible Severity: Low/Mild
000214	06/28/2000	A 32 y/o male apple thinner developed respiratory symptoms. The trees had been sprayed 15 days prior to entry. Diagnosed with asthma secondary to chemical exposure. Fungicide: Triflumizole Insecticide: Azinphos-Methyl 1 Possible Severity: Low/Mild

Case	Exposure Date	Incident Description
000216	07/09/2000	A 29 y/o male orchard applicator developed symptoms while spraying pesticide. He was not wearing full head protection. Insecticide: Phosmet: Imidacloprid 1 Probable Severity: Low/Mild
000217	07/28/2000	A 28 y/o male unlicensed applicator was occupationally exposed. He was wearing PPE but he removed his coat for a while because the weather was hot. Shortly after, he became ill. Insecticide: Potassium salts of fatty acids 1 Definite Severity: Low/Mild
000218	08/07/2000	A box of wettable powder insecticide fell from a truck onto the freeway and burst open. Several cars drove through the dust and some drivers developed symptoms. Both WSDA and Ecology were involved in the clean-up. Insecticide: Azinphos-Methyl 1 Probable Severity: Low/Mild
000225	07/17/2000	A 21 y/o male was sprayed in the face with a fungicide when he removed the hose from a sprayer He was wearing eye protection but spray ran down his forehead. Fungicide: Mefenoxam 1 Definite Severity: Low/Mild
000226	08/08/2000	A 32 y/o male applicator wore full protective gear when he applied. However, he sought medical treatment for symptoms experienced after mowing orchard grass 2 days after a fungicide application. Fungicide: Ziram Insecticide: Azinphos-Methyl 1 Possible Severity: Low/Mild
000230	08/08/2000	A 36 y/o female cut firewood near her home which had been previously treated with a powdered insecticide. She developed systemic symptoms around 4:00 am the next morning and went to the ER for treatment. Insecticide: Chlorpyrifos 1 Possible Severity: Low/Mild
000234	08/16/2000	A 46 y/o female awoke to smell of pesticides from an application to an adjacent vineyard. She reported symptoms that resolved in 2 days. WSDA environmental samples from inside and outside of the patient's house were positive for the pesticide applied. Insecticide: Methoxychlor; Malathion 1 Probable Severity: Low/Mild
000240	08/22/2000	A 49 y/o female applied malathion to her house plants. Approximately 20 mintues later, she reported feeling short of breath, coughing and had a headache. She took herself to the ER where she was given a shower and sent home. Insecticide: Malathion (ANSI) 1 Possible Severity: Low/Mild
000241	08/22/2000	A 35 y/o male applied a fungicide to his lawn and approximately 20 minutes later began to develop a rash on his arms. He washed the area of irritation and the next day went to see his MD. Diagnosed with contact dermatitis Fungicide: Chlorothalonil 1 Definite Severity: Low/Mild
000244	09/04/2000	A 15 y/o male reported CNS and respiratory symptoms after re-entering home which had been treated with bug bombs. Family waited 5 hours before returning home & ventilated for 1 hour before boy entered. He was treated at ER. Insecticide: Cypermethrin 1 Possible Severity: Low/Mild

Case	Exposure Date	Incident Description
000247	08/17/2000	Three adult male crewmen on a freighter became ill after ship holds were fumigated at anchor in Port Angeles, WA. Gas leaked from holds while underway. Maritime MD from Portland tended to the crew at sea off Coos Bay, OR. Crew were cleared for duty after exams. Fumigant: Aluminum phosphide 3 Probable Severity: Low/Mild (3)
000248	08/30/2000	Six PUD employees were drifted upon while working on equipment near an application to a potato field. All smelled the spray and some felt spray mist. Tests positive for residues on clothing, truck and nearby vegetation. No medical treatment sought. Fungicide: Chlorothalonil; Sulfur 3 Probable Severity: Low/Mild (3) 1 Insufficient Information 2 Asymptomatic
000251	08/15/2000	A 33 y/o female had asthma attack immediately following the spraying of a nearby potted plant in her office. EMT was called & she sought medical treatment. Her symptoms resolved about 10 minutes after leaving the building. Insecticide: Diazinon 1 Possible Severity: Low/Mild
000252	08/08/2000	A licensed landscaper developed symptoms after applying herbicide all day in a rubber rain suit. Symptoms resolved the same day without treatment. Some uncertainty whether symptoms related to heat stress or inhalation of herbicide volatiles. Herbicide: 2,4-D, MCPA, Dicamba 1 Possible Severity: Low/Mild
000255	05/26/2000	A 38 y/o pregnant teacher developed symptoms after an insecticide application on fruit trees next to the school. She sought medical treatment the same day. WSDA investigation noted that the odor had entered the school air conditioning system. Insecticide: Diazinon 1 Possible Severity: Low/Mild
000257	09/07/2000	Nine teachers and 22 students experienced mild symptoms after an aerial application to a potato field next to a school district complex. The application occurred shortly before staff and students arrived. WSDA tests were positive for pesticide residues around the buildings. Fungicide: Chlorothalonil Insecticide: Propargite; Methamidophos 13 Probable Severity: Low/Mild (13) 11 Possible Severity: Low/Mild (11) 1 Suspicious 2 Unlikely 3 Insufficient Information 1 Unrelated
000258	09/08/2000	A Three y/o female developed eye pain and orbital swelling after lice shampoo splashed in her eyes. She was treated and released in an ER. Eye irritation persisted for several days. Insecticide: Pyrethrins 1 Definite Severity: Low/Mild
000261	09/15/2000	A 22 y/o male construction worker developed symptoms after fungicide from an open can splashed his face. He was using the fungicide to treat logs for log homes. He sought medical treatment the same day. Fungicide: Methylene bis (thiocyanate); 2-(Thiocyanomethylthio) benzothiazole 1 Definite Severity: Moderate

Case	Exposure Date	Incident Description
000262	09/14/2000	A 36 y/o male employed by roofing company was spraying an insecticide. He was wearing goggles but it was quite windy and the spray blew on his face and arms. He sought treatment for an irritated eye. Insecticide: Esfenvalerate 1 Probable Severity: Low/Mild
000266	09/21/2000	A 45 y/o male applicator had a backpack sprayer leak herbicide on his back. He had symptoms 3 days later and sought medical treatment 9 days later. Herbicide: Glyphosate 1 Probable Severity: Low/Mild
000268	08/18/2000	Two adult male apple thinners experienced symptoms after a spray application took place 250 feet away. Both sought medical treatment for systemic and topical symptoms. Insecticide: Azinphos-Methyl 2 Possible Severity: Low/Mild
000272	09/22/2000	Two adult females alleged that strong pesticide odors coming from an application to a nearby residence drifted causing them and a 3 month old male to become ill. WSDA investigated. Herbicide: Trifluralin 3 Possible Severity: Low/Mild (3)
000275	09/23/2000	A male developed symptoms 2 hours after he spilled herbicide on his shirt from a handheld spray tank. He was not wearing PPE. He sought treatment the same day. Herbicide: Diuron; Imazapyr 1 Possible Severity: Low/Mild
000276	09/23/2000	A 48 y/o worked in her garden and sprayed a herbicide. The individual became nauseous, experienced an increased heart rate and respiratory problems. She went to the local ER for medical attention. Herbicide: Diquat bromide; Fluazifop-P-butyl 1 Probable Severity: Low/Mild
000279	09/26/2000	A 30 y/o male pest control applicator was sprayed in the eye with a herbicide when he set the hose on the ground. He sought treatment for mild ocular symptoms the same day. Herbicide: Glyphosate; 2,4-D; Dicamba; Mecoprop 1 Probable Severity: Low/Mild
000283	10/03/2000	A 60 y/o male telephone lineman developed symptoms while digging a ditch in a field that had been treated with a fumigant 1-2 hours earlier. He sought treatment 3 days later for continuing neurological and ocular symptoms. Fumigant:1,3- Dichloropropene 1 Possible Severity: Low/Mild
000285	10/09/2000	A 45 y/o male went to ER with symptoms from an accidental ingestion of diazinon when an uncovered bottle spilled on him from the top of a counter. Insecticide: Diazinon 1 probable Severity: Low/Mild
000286	10/10/2000	A 46 y/o male applicator sprayed himself in the face while he was checking the sprayer hose. He was wearing goggles but drops got into his eyes. He sought treatment the same day for topical symptoms. Plant growth regulator: NAA 1 Possible Severity: Low/Mild

Case	Exposure Date	Incident Description
000287	10/12/2000	A 36 y/o female applied an aerosol fogger to her bedding prior to going to bed. She did not ventilate properly. She awoke the next morning with HA, lethargy, shaky and numbness in her left arm which she believes were related to the exposure. Insecticide: Pyrethrins; Permethrin 1 Possible Severity: Low/Mild
000291	07/06/2000	A 29 y/o male applicator sprayed weeds using a backpack sprayer. He wore only rubber gloves for PPE. His legs became wet from moisture and spray material on the tall grass. He sought treatment 2 weeks later when rash on his lower legs didn't go away. Herbicide: Glyphosate 1 Probable Severity: Low/Mild
000295	09/07/2000	A 33 y/o female nursery worker was mixing a container of disinfectant/algaecide when it splashed into her eye. She rinsed the eye and sought medical attention. Disinfectant: Alkyl dimethyl benzyl ammonium chloride 1 Probable Severity: Low/Mild
000296	09/11/2000	A 43 y/o female reported that she had a reaction to a disinfectant sprayed in her work area. She sought treatment the same day for respiratory and ocular symptoms. Disinfectant: Hydrogen peroxide; Peroxyacetic acid 1 Possible Severity: Low/Mild
000297	09/28/2000	A 31 y/o fruit packing employee was splashed in the eye with chlorine treated water. 1 Probable Severity: Low/Mild
000298	09/29/2000	A 23 y/o male developed respiratory symptoms while picking apples. He sought medical treatment the same day. Pesticides were applied 4, 9 and 10 days prior to symptoms. Fungicide: Ziram Plant growth regulator NAA 1 Probable Severity: Low/Mild
000300	10/06/2000	A 70 y/o male was sprayed in the face with moss control product when the hose connection came off as he was preparing to spray his shed roof. He wore latex gloves but developed a burning sensation and blistering on his face. He was seen and treated in the urgent care center. Symptoms resolved the next day. Herbidcide/algaecide: Ferric sulfate 1 Definite Severity: Low/Mild
000302	10/19/2000	A 46 y/o male construction worker was exposed when a pesticide company sprayed him during an application to a nearby tree. He developed mild ocular and upper respiratory symptoms later that day and sought medical care the following day. Insecticide: Malathion 1 Possible Severity: Low/Mild
000305	10/29/2000	A 20 y/o sprayed a bug killer extensively over his 10X12 bedroom where he studied and slept. Within one half hour he had neurological and gastrointestinal symptoms. He sought medical care. Insecticide: Chlorpyrifos 1 Probable Severity: Low/Mild
000307	10/25/2000	A 55 y/o male reported that methyl bromide gas blew up his boot and pants leg when his rubber boot split while he was sealing a probe hole with his heel. He developed symptoms the next day & sought medical care 5 days later. The burns resolved slowly. Fumigant: Methyl bromide 1 Definite Severity: Moderate

Case	Exposure Date	Incident Description
000308	11/01/2000	Several employees of a firm located adjacent to fields with a center pivot irrigation system were exposed to soil fumigant following a chemigation application, volitization of the pesticide and temperature inversion. Fumigant: Metam-sodium 9 Probable Severity: Low/Mild (9) 1 Possible Severity: Low/Mild
000309	11/02/2000	A 38 y/o female was working in her kitchen. There was a leaking container of a moss control product under her sink. Her eyes became red and swollen but she decided not to seek medical care although she did call the ER. She threw the container away. Herbicide/algaecide: Zinc chloride 1 Possible Severity: Low/Mild
000311	07/02/2000	A 31 y/o male applicator sought treatment for ocular symptoms which developed after he turned back at the end of the row and the wind drifted spray in his face. He was wearing PPE which included goggles. Insecticide: Azinpho-Methyl 1 Probable Severity: Low/Mild
000315	06/21/2000	A 18 y/o female painter, climbing a ladder received a drop of wasp spray into her eye when another employee attempted to spray yellow jackets. She rinsed her eye and went for treatment for mild ocular symptoms. Unknown: Wasp and Bee Spray 1 Definite Severity: Low/Mild
000316	09/28/2000	A 43 y/o female caregiver at a retirement home sprayed a clients bedding with a lice spray. Immediately she reported respiratory symptoms that continued to develop into an asthmatic attack. She was taken to a hospital for treatment. Insecticide: Permethrin 1 Probable Severity: Low/Mild
000318	11/05/2000	A 71 y/o woman broke a pint of Malathion stored on the refrigerator on her patio. The product spilled on her. She had no symptoms. Three neighbors developed symptoms after smelling the product. None of the four sought treatment. Insecticide: Malathion 3 Possible Severity: Low/Mild (3) 1 Asymptomatic
000320	10/22/2000	A 15 y/o male reported he accidentally drank some flea shampoo when he reached, in the dark, for what he thought was a glass of something else. Insecticide: Pyrethrins 1 Definite Severity: Low/Mild
000321	11/14/2000	A 37 y/o female was sorting apples in warehouse when she began to experience eye irritation after splashing sorting water in her eyes. Disinfectant: Chlorine 1 Definite Severity: Low/Mild
000326	12/11/2000	A 45 y/o taken to ER after intentionally ingesting rodenticide and anticonvulsant Rodenticide: Strychnine 1 Definite Severity: high/Severe
000330	12/24/2000	An insecticide was applied to a dog's neck for fleas. A 3 y/o male child touched the dog and soon after had eye pain, redness and swelling. He was taken to the ER for medical treatment. Insecticide: Imidacloprid 1 Probable Severity: Low/Mild

Department of Labor and Industries

Department of Labor and Industries
Summary of Pesticide Inspections
2000

City, County, Inspection #	Pesticides Involved	# of employees exposed	Type of Business	How exposed	Other Agencies Involved	Investigation Dates (Opened) (Closed)	Citations	Type of Inspection
East Wenatchee Douglas 111208112	Dursban 50W	2	Commercial applicator	NA	None	1/6/00 1/6/00	No Violations	**Follow-up Inspection**
Orondo Douglas 303365951	None mentioned	3	Farm management	NA	None	5/12/00 5/16/00	**General:** No hazard communication training	Scheduled Inspection
Yakima Yakima 303364889	Procure 50W	2	Crop preparation		None	5/1/00 5/4/00	**General:** No safety meetings No 1st aid trained staff No written Hazard Communication Program No list of hazardous chemicals	Scheduled Inspection
Sunnyside Yakima 303365985	Azinphosmethyl	1	Crop preparation	Application	None	7/15/00 7/18/00	**Serious:** $6600 No respirator medical evaluation No respirator fit tests No respirator training Not cleaning & maintaining respirators Not cleaning PPE No soap or towels available No change of clothing in event of emergency Inadequate amt water for washing **General**: No list of hazardous chemicals	Drive-by/Observed Inspection
Sunnyside Yakima 303653026	Micro Max	2	Fruit orchard	NA	DOH	7/20/00	**General**: No written Accident Prevention Program No written Hazard Communication Program No Worker Protection Standard training	Referral: DOH
Wenatchee Chelan 303365837	None mentioned	2	Fruit orchard	NA	None	5/23/00 5/30/00	**General:** No hazard communication training	Scheduled Inspection
Sunnyside Yakima 303364798	None mentioned	4	Fruit orchard	NA	None	7/15/00 7/15/00	No violations	Scheduled Inspection

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Royal City Grant 303365597	None mentioned	2	Fruit orchard	Handling	None	6/17/00 6/19/00	**General:** No change of clothing in event of emergency No list of hazardous chemicals	Scheduled Inspection
Wapato Yakima 303546303	K-Salt Provado	1	Fruit orchard	Handling	None	7/22/00 7/24/00	**Serious:** $300 No change of clothing in event of emergency No soap or towels available	Scheduled Inspection
Wenatchee Grant 303593461	Guthion	5	Fruit orchard	Handling	DOH	10/6/00 10/6/00	**General:** No change out schedule for respirator cartridges No Central Posting	Referral: DOH
Wapato Adams 303365746	None mentioned	2	Fruit orchard	Handling	DOH	4/6/00 4/11/00	**Serious:** $750 No respirator protection program No respirator fit tests No respirator training Not cleaning & maintaining respirators Inadequate storage of respirators Not cleaning PPE Inadequate storage of PPE No soap or towels available No change of clothing in event of emergency No emergency eyewash **General:** No written Hazard Communication Program No written Accident Protection Program No central posting	Scheduled Inspection
Prescott Walla Walla 303653018	Success Calcium spray	1-30	Fruit orchard	NA	None	7/7/00 7/20/00	**General**: No respirator change out schedule No portable water provided for eyewash Inadequate PPE No central posting	Programmed Inspection
Othello Adams 303364830	Calcium Carbonate	3	Fruit orchard	Handling	None	7/1/00 7/6/00	**General:** Inadequate amt water for washing No soap or towels provided No change of clothing in event of emergency No inventory of pesticides	Scheduled Inspection

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2000

City, County, Inspection #	Pesticides Involved	# of employees exposed	Type of Business	How exposed	Other Agencies Involved	Investigation Dates (Opened) (Closed)	Citations	Type of Inspection
Quincy Grant 303364954	None mentioned	4	Fruit orchard	NA	None	6/16/00 6/21/00	No violations	Scheduled Inspection
Wapato Yakima 303546345	Guthion Lorsban 50W	2	Fruit orchard	NA	None	7/22/00 7/24/00	**Serious:** $3780 No respirator medical evaluation No respirator fit tests No respirator training Not cleaning & maintaining respirators Inadequate storage of respirators Not cleaning PPE No hazard communication training No soap or towels available No change of clothing in event of emergency No emergency eyewash	Scheduled Inspection
Outlook Yakima 303593453 397018625	Guthion	2	Fruit orchard	Handling	None	7/29/00 7/31/00	**Serious:** $1120 No towels provided No change of clothing in event of emergency	Drive-by/Observed Inspection
Orondo Douglas 303364848	Rally 40W	1	Fruit orchard	Handling	None	5/6/00 5/25/00	**Serious**: $360 No emergency eyewash No soap or towels available No change of clothing in event of emergency **General:** No safety meetings	Scheduled Inspection
Bridgeport Douglas 303364962	Lorsban 4E Promalin	2	Fruit orchard	Handling	DOH	4/20/00 4/21/00	**General**: Facial hair with respirator No list of hazardous chemicals No safety meetings Inadequate pesticide spray records No central posting	Complaint: Drift from this field to adjacent field Personal protective equipment & respirator concerns
Brewster Okanogon 303365639	None mentioned	2	Fruit orchard	Not specified	None	6/24/00 6/24/00	**General:** No respirator medical evaluation No list of hazardous chemicals	Scheduled Inspection

Department of Labor and Industries
Summary of Pesticide Inspections
2000

City, County, Inspection #	Pesticides Involved	# of employees exposed	Type of Business	How exposed	Other Agencies Involved	Investigation Dates (Opened) (Closed)	Citations	Type of Inspection
Brewster Okanogon 303365670	Apogee Swat	3	Fruit orchard	Handling	None	6/6/00 6/28/00	**Serious:** $750 No soap or towels available No change of clothing in event of emergency **General**: No emergency eyewash	Scheduled Inspection
Outlook Yakima 303593495	DiPel DF	2	Fruit orchard	Application	None	7/29/00 7/30/00	**Serious:** $450 No change of clothing in event of emergency Inadequate supply of water for routine washing	Scheduled Inspection
Othello Adams 303653042	Azinphosmethyl	6	Fruit orchard	Alleged Drift (not valid)	WSDA	7/28/00 8/18/00	**Serious:** $1200 No respirator fit test **General:** No respirator cartridge change out schedule No WPS training No portable water provided for eyewash	Referral: Thinners experiencing pesticide exposure symptoms
Sunnyside Yakima 303593297	Guthion	3	Fruit orchard	Handling	NA	8/12/00 8/17/00	**Serious:** $1000 No soap or towels available No change of clothing in event of emergency No emergency eyewash No hazard communication training **General**: No MSDS	Scheduled Inspection
Zillah Yakima 303546337 399003179	Rally Rio Imic Thiolux Sulfur	3	Fruit orchard	Handling	NA	6/22/00 6/22/00	No violations	Complaint involved respirator issues; interviews indicated invalid complaint
Orondo Douglas 303365910	Di Pel DF	1	Fruit orchard	Handling	NA	5/13/00 5/19/00	**Serious:** $180 No emergency eyewash No hazard communication training	Scheduled Inspection
Orondo Douglas 303365878 048003036	Sevin 4F	2	Fruit orchard	Handling	NA	5/16/00 5/31/00	**Serious:** $1050 No change of clothing in event of emergency	Drive-by/Observed Inspection

Department of Labor and Industries
Summary of Pesticide Inspections
2000

City, County, Inspection #	Pesticides Involved	# of employees exposed	Type of Business	How exposed	Other Agencies Involved	Investigation Dates (Opened) (Closed)	Citations	Type of Inspection
Wapato Yakima 303546493 397018625	Phosmet Chloronicotinyl Calcium Chloride	8	Fruit orchard	Handling	NA	6/29/00 8/3/00	**General:** No respirator cartridge change out schedule No change of clothing in event of emergency No portable water provided for eyewash	Referral Respirator cartridges not being changed Symptoms of pesticide exposure
George Grant 304126766	Roundup Cay Use	10	Field crops	Handling	DOH	12/1/00 12/1/00	**General:** No Hazard Communication Program No written respirator program Not providing personal protection equipment as required by label	Referral DOH Lack of personal protective equipment No chemical training
Mattawa Grant 303364871	None mentioned	2	Field crops	Handling	NA	7/3/00 7/10/00	**General:** No evaluation of respiratory hazards	Complaint Inspection Hay dust exposure Respirator deficiencies
Lynden Whatcom 115283459	Gramoxone	6	Potato farm	Handling	NA	10/24/00 12/4/00	**Serious:** $200 No emergency eyewash Other safety violation not related to pesticides **General:** No written Hazard communication No written accident prevention program No written respirator program No respirator fit test No respirator medical evaluation	Complaint
Olympia Thurston 302213913 342011099	Benlate Diazinon 50W	6	Mushroom farm	Handling	NA	6/1/00 6/1/00	No violations	Follow up Inspection
Rochester Thurston 302213244	None mentioned	5	Dairy	Application	WISHA Safety	4/13/00 4/13/00	**General:** No policy on voluntary use of respirators	Referral from WISHA Safety Inspection

Department of Labor and Industries
Summary of Pesticide Inspections
2000

City, County, Inspection #	Pesticides Involved	# of employees exposed	Type of Business	How exposed	Other Agencies Involved	Investigation Dates (Opened) (Closed)	Citations	Type of Inspection
Latah Spokane 303540363	Ban Rot Tame Astro B-Nine	5	Nursery	Handling	NA	6/21/00 10/5/00	**Serious:** $750 No respirator fit test Did not replace cartridges at end of shift No emergency eyewash No portable water provided for eyewash No glove provided as required by label	Complaint Inspection No pesticide training No respirator training *No replacement cartridges for respirators* Not upholding REI requirements
Othello Adams 303653042	Azimphosmethyl Success Calcium	6		Handling	DOH	7/28/00 8/18/00	**Serious:** $1200 No respirator fit test **General:** Inappropriate respiratory protection No handler training No portable water provided for eyewash	Referral Employees in orchard during spray application

Appendix E

WSDA Pesticide License Types

WSDA PESTICIDE LICENSE TYPES

License Type	Definition
Commercial Applicator	A person engaged in the business of applying pesticides to the land/property of another. This land can either be publicly or privately owned. Prior to license issuance, a Financial Responsibility Insurance Certificate (FRIC) must be filed with WSDA by the insuring company.
Commercial Operator	A person employed by a WSDA-licensed commercial applicator to apply pesticides to the land of another. This land can either be publicly or privately owned.
Commercial Pest Control Consultant*	A person who sells or offers pesticides for sale at other than the licensed pesticide dealer outlet from which they are employed. In addition, commercial consultants may offer or supply technical advice or make recommendations to the users of non-home and garden pesticides. They may also perform wood destroying organism inspections. Licensed and employed commercial applicators and commercial operators may act as commercial consultants without acquiring the consultant's license.
Dealer Manager*	A person who supervises the distribution of pesticides (other than home and garden products) from a licensed pesticide dealer outlet.
Private Applicator	A person who applies or supervises the application of a "Restricted Use" pesticide on land owned or rented by him or his employer for the purpose of producing an agricultural commodity.
Private Commercial Applicator	A person who applies of supervises the use of a "Restricted Use" pesticide on land owned or rented by him or his employer for purposes other than the production of an agricultural commodity.
Public Operator	A person who, while acting as an employee of a governmental agency, applies restricted use pesticides by any means or general use pesticides by power equipment on public or private property. Public operators may act as public consultants. (Public operators licensed only in the Public Health category are exempt from the fee.)
Public Pest Control Consultant*	A person who, while acting as an employee of a governmental agency, offers or supplies technical advice, supervision, aid, or makes recommendations to the user of pesticides other than home and garden products. Public Consultants may not act as public operators without the operator's license.
Demonstration and Research Applicator	A person who applies or supervises the use of any experimental or restricted use pesticide to small experimental plots at no charge. (Public employees performing research applications fall under the licensing requirements of the public operator.)

***License does not allow the holder to use or supervise the use of a restricted use pesticide. Refer to other types for appropriate license.**

Appendix F

Department of Ecology Maps

Appendix G

DOH – NIOSH Grant “Improving Data Quality in Pesticide Illness Surveillance”

"Improving Data Quality in Pesticide Illness Surveillance" National Institute for Occupational Safety and Health (NIOSH) Grant, Washington State Department of Health

1. Improving the functionality and compatibility of the PIMS database management system

   From 1991 through 1999, the PIMS program used an Rbase database located on a Novell server at DOH. Because of a lack of internal support for Rbase programs, DOH adoption of new software specifications and, most importantly, coded variables inconsistent with the current CDC/NIOSH standardized definitions and formats, a new database management system was created. The original database structure was revised and expanded so that data are consistent with CDC/NIOSH standard variable definitions, coding, names and formats, and can be easily exported to NIOSH, EPA and the other surveillance states in a standardized format.

2. Evaluating and improving the quality of data collected by PIMS

   a. Examination of the effect of data quality on case determination for pesticide related illness: This work has been completed and is in the process of being written up for presentation.

   b. Estimate the degree and understanding of the determinants of underreporting: As of this printing, the following activities have been initiated.

      Key Informant Interviews and Worker Focus Groups have been conducted and the data are being analyzed.

      DOH is presently conducting a study of hospital and emergency department out patient records from providers in the Yakima Valley to ascertain the degree of under reporting. Each of the major health facilities in Yakima County will be contacted about outpatient encounters potentially related to pesticides during the year 2000. Potential cases will be identified by External Cause of Injury Codes (E-codes) that specify specific pesticides or agricultural chemicals, or manifestation codes indicating toxic effects of specific and non-specific pesticides and non-medical substances. The records will be matched against PIMS cases.

      In the third year of the project, interviews will be targeted to providers where farm workers seek medical care without filing a Workman's Compensation claim. These interviews will focus on the importance of the surveillance system and discuss provider procedures for reporting when suspected pesticide related illnesses are seen.

   c. Improving the quality of spatial data: Presently incident location is recorded only to the county level. This makes it impossible to use the data to target specific regions, conduct spatial analysis of where farmworkers seek medical care in relation to where they work or live, or to graphically display the location of incidents on a statewide basis. This portion of the study will seek to improve the accuracy of the recording of incidents by geographic location. It will be undertaken in the third year of the project.

3. Enhancing the analysis of PIMS data and expanding the dissemination of program and policy relevant information derived from PIMS data.

Work on this element will be completed in the second and third years of the grant. Interviews will be conducted with those who develop interventions and those affected by interventions. Interviews will also be conducted with the PIRT Panel, employer trade organizations, grower groups and farm worker representatives. A final report based on the interviews will summarize the comments and list the suggested analyses and data products.